More GO for '58 FORDS!

CAR CRAFT

DEPT.
IND
C711-457 1-59
TECHNOLOGY DEPARTMENT
DETROIT PUBLIC LIBRARY
5201 PUTNAM AVE.
DETROIT 2, MICH.

AUGUST 1958 25c

JUN 19 1958
DETROIT

Custom T-Bird Trickery

LUE-ON
estyling:
ender Fins
re Kits

on Francisco
nalyzes the
ottest Olds
rag Engine!

THESE FINE TREND BOOKS ARE...

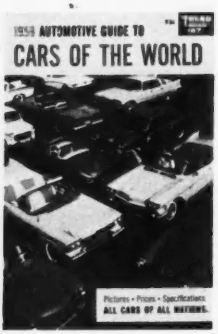
TOPS IN AUTOMOTIVE READING

HANDY CAR HINTS

A trouble-shooter par excellence — filled with fresh, practical answers to universal automotive problems. Designed to aid the everyday driver, it covers utilization of car space, hot and cold weather driving, gas and oil, tires and tube lights and sight, the engine, the body — inside and outside, safety driving, family driving — with emphasis on comfort and conveniences like pet carriers, etc., garage and driveway accessories and storage tips, and highway driving.

1958 CARS OF THE WORLD

This popular annual presents a parade of the new cars produced the world over. It's a complete guide to every production car built for 1958, containing photos, specifications and prices on over 200 models from all nations. This year's edition highlights a new special feature: a group of outstanding articles on the most revolutionary automotive developments of our day, such as air suspension, torsion bars, fuel injection, etc. Many road tests.



RESTYLE YOUR CAR

Here are all the facts on how to restyle your car and save money, too. The most complete guide on customizing ever published; it tells and shows with hundreds of photos how to go about the customizing process you select. Covers costs and styles; home customizing; all about striping; how to save time and money by using the new fiberglass plastics; how to select your color schemes. A treasury of offbeat customizing ideas.

75¢ EACH AT YOUR NEWSSTAND NOW!

Or send 85¢ (to cover postage etc.) to:

TREND BOOKS

5959 Hollywood Blvd., Los Angeles 28, Calif

$575.00 complete with warranty

WORLD'S FINEST!

- 4-WHEEL TORSION-BAR SUSPENSION
- ADJUSTABLE FRICTION SHOCKS
- SQUARE-TUBE, "BOX SECTION" CHASSIS
- SEPARATE, UPHOLSTERED BUCKET SEAT

Amazing suspension system—designed by men with Indianapolis car experience—make this the best handling car on the track!

Dealers being appointed nationally

the GRAND PRIX ¼ midget

THE GRAND PRIX MFG. CORP. • 1710 Potrero Ave. • El Monte, Calif.

coming next month in SEPTEMBER **CAR CRAFT** on sale AUG. 15th

Styler Custom Designs a "HARDTOP STREET ROD"

New! CAL CUSTOM

TUBULAR GRILLE CONVERSIONS

Give Your Late-Model Ford or Chevrolet That Low-Slung Custom Car Look!

Massive 'n' Masculine! Sleek 'n' Sparkling! Clean, smooth, unbroken lines of heavy ¾" chrome tubing sweep all the way across, without obstruction, and curve sharply to the rear at each side. Car looks wider, lower!

Notice how the design-clutter of your original, standard grille is eliminated . . . how the parking lights are installed behind the grille where they can't be damaged or even seen, yet the full beam of light shows through!

Simple to assemble and install. No alteration work is required on most models.

Hurry — be among the first!

'57 Ford...$34.95—'55, '56 Fords & '58 Chev...$37.50

Now at Your Favorite Accessory Store or write direct to —

CALIFORNIA CUSTOM ACCESSORIES MFG. CO.
Dept. CC-8—1807 W. 65th St., Los Angeles 47, Calif.

ANOTHER "40th ANNIVERSARY" SPECIAL!

MORE ARE ON THE WAY . . . WATCH FOR THEM! AND ALWAYS LOOK FOR THE CAL CUSTOM NAME — YOUR GUARANTEE OF THE FINEST, AND LATEST IN CUSTOM ACCESSORIES.

CAR CRAFT

The "Show-How" Magazine

Vol. 4
Published Monthly
No. 4

publisher
Robert E. Petersen
editorial director
Wally Parks
editor
Dick Day
managing editor
Bob Pendergast
associate editor
Don Evans
art director
Al Isaac
assistant
art director
Art Smith
production
Yvonne Hall
Mario Rossi
advertising director
A. M. Rendich
advertising manager
Bill King
ad production
Bob Young
circ. manager
Robert A. Hyland
circulation
Gordon Behr
photographers
Bob D'Olivo
Eric Rickman
Al Paloczy
Colin Cotts
contributors
Bob Hanson
Gaston Barris
Hall Emery
George Carey
Jay Bolton
Dick Cotter
Bud Long

features

12 *T-BIRD TRICKERY* . . . . . Ten Top T-Birds

28 *MORE GO FOR THE '58 FORDS* . . . . . by Don Francisco

34 *RESTYLING THE THUNDERBIRD* . . . by Winfield's Custom Shop

38 *CANADIAN CAPER* . . . . . Stylized Sedan

44 *ENGINE ANALYSIS* . . . . . by Don Francisco

52 *NATIONALS NEAR* . . . . . Championship Preview

54 *ACCESSORY OF THE MONTH* . . . . . Glass Fins and Tire Kits

how-to-do-its

40 *QUAD ANTENNAS* . . . . . The Latest Craze

departments

6 *SHOPPING AROUND* . . . . . New Products

58 *LETTERS* . . . . . From the Readers

60 *WHAT'S YOUR PROBLEM?* . . . . . by Bob Pendergast

66 *COMING ATTRACTION* . . . . . Louise Muller

cover

Joe Castro's, Jerry Anolik's and Dick Jackson's T-Birds give you a colorful sample of what is being done to these popular little cars. Starting on page 12, we are offering 16 pages of the best restyling gimmicks that have been applied to the "Birds". Also, this month's Restyle feature is based on a Thunderbird.

—Anscochromes by Frank Faraone, George Barris, Al Paloczy

Car Craft, U. S. Copyright 1958 by Petersen Publishing Co., 5959 Hollywood Blvd., Los Angeles 28, Calif.

Second-class mail privileges authorized at Los Angeles, Calif. Subscription Rates: U. S., Possessions, Canada—1 year $3, 2 years $5. 25¢ per copy. Overseas—1 year $4, 2 years $7. Give 3 weeks notice for address change. ADVERTISING: Petersen Publishing Co., 5959 Hollywood Blvd., L. A. 28, Calif. — 17 E. 48th St., N. Y. 17, N. Y.—524 Book Bldg., Detroit 26, Michigan.

CAR CRAFT

Subscription Department
5959 Hollywood Boulevard • Los Angeles 28, Calif.

Please enter my name as a monthly Car Craft subscriber for:

☐ One year $3.00 ☐ Two years $5.00

Name_____

Address_____

City_____ Zone_____ State_____

ORDER BY MAIL

HONEST NEW ITEMS

ORDER BY MAIL

KROME TAPE

The Self Sticking Mylar Tape for Thousands of Customizing Applications. Will adhere to any clean smooth surface—Gleaming Chrome Finish may be tinted with Kolor Krome Paint.

No. 3350	2 inches wide Foot .20	10 Ft. Roll $1.90
No. 3352	3 inches wide Foot .25	10 Ft. Roll 2.25
No. 3358	18 inches wide Foot 1.95	10 Ft. Roll 17.50

KOLOR KROMZ

The most sensational customizing product in years Featured in recent issues of Rod and Custom and Custom Cars Magazines — Formulated by George Barris — Mr. Custom Car hisself — Transparent Coloring for Chrome—the (mirror like) reflection of chrome shows through—

4 Dazzling Colors in 16 oz. Spray Can

HONEST'S No. KK-1 Pagan Gold
KK-2 Candy Apple Red
KK-3 Oriental Blue
KK-4 Parisian Green

16 oz. Can $2.79 Post Paid

For Chrome—Stainless Steel—Polished Aluminum

LOWERING BLOCKS

For All Cars with 2 Leaf Springs on Rear. Complete with U-Bolts.

Kit to Lower Rear Bumper 2" — $3.95
Kit to Lower Rear 3" $4.50
Kit to Lower Rear 4" $4.95

State Year and Model Car

HONEST No. 51

HEAT RESISTANT ENGINE ENAMEL
RED - BLUE - GREEN
½ Pint
$1.00 Postpaid
HONEST No. 12

GO MAN GO EMBLEM

Fits where Buick bomb-sight and 57 Ford hood emblem fits—Also adapts to most any car.

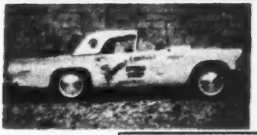
HONEST No. 65

Each $1.95 Postpaid

Chrome Knobs

FOR THAT CUSTOM LOOK

CK-111 CK-112
REPLACES DASH KNOBS ON MOST CARS
40c Each Postpaid



HOLLYWOOD WOLF WHISTLE

Works on Engine Vacuum
$2.95 Postpaid
HONEST No. 15

PINSTRIPING
12 Separate Designs Per Set
Colors: Red-Green-Blue-Gold-White-Black
Each set of 12 Designs only $1.00 postpaid
HONEST No. 39

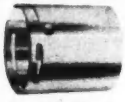
SOM-RAY SPUN ALUMINUM WHEEL DISCS HEAVY GAUGE

For Draggin' For the Street
New Low Price,
$2.95 Each 14" 15" 16"
STATE TIRE SIZE

HONEST No. 49

Send 25c for new 1958 Surprise Money Saver Catalog—then next issue FREE

DELUXE CHROME GENERATOR COVERS



For all GM-Chrys products
Ford Products
2.25 Postpaid
HONEST No. 23

NEW FIESTA TYPE CHROME WHEEL COVERS WITH CHECK BACKGROUND

14" or 15"
For all cars — Replaces original factory type.

3 BAR SPINNER
Heavy Construction.
Space for Weights
Set of 4 $28.95
HONEST No. 40

Set of 2 $14.50
HONEST No. 41
(State size of Wheel)

GIANT CAR DICE

Red and White
Blue and White
Green and White
Black and White

$1.25 pr. Postpaid
HONEST No. 1

SEND 25% DEPOSIT ON C. O. D. — SEND FULL AMOUNT ON ITEMS MARKED PREPAID
NO CODs FOR LESS THAN $5.00

My car is a _____ Year _____
Name _____
Address _____
City _____ State _____

Quantity	Part No.	Description	Price

HONEST CHARLEY SPEED SHOP

SHOPPING AROUND

LEATHER CLEANER

Tempo Instant Spray Upholstery Fabric and Leather Cleaner has been developed to make easy the job of cleaning automobile interiors of fabric, leather, Vinyl or leatherette. Can also be used on convertible tops, floor rugs and even white sidewall tires. Cleaner is simply sprayed on, brushed, then wiped off. For information write Tempo Products Co., 2075-cc East 65th St., Cleveland 3, Ohio.

CHROME PROTECTOR

Aluminum and chrome plated surfaces such as automobile bumpers and trim can now be protected from weathering and the corrosive action of road salt with a tough, water white aerosol lacquer called Brite #3. Easily applied from a spray bomb container, the coating dries hard and clear in 15 minutes. Available at most leading automotive supply stores.

NEW RUST INHIBITOR

Detroiter Rust Inhibitor is a compound of dry, highly soluble chemicals which dissolve in the cooling system water and remove acidity, thus preventing rusting in radiators and engine blocks. It is approved and used by automotive manufacturers. It is packaged in sealed plastic 3-oz. "Cel-Paks", enough to protect the standard automotive cooling system for 6 months. The inhibitor can be used with any standard anti-freeze. American Waterlock Corporation, Box 407-cc, Ortonville, Michigan.

CONTINUED

DMC ENGINEERED WITH AIRCRAFT PRECISION

FOR SAFETY AT SPEED!

A REAL RACING MACHINE

Body is of tempered fiberglass attached to the tubular frame and supported by simple steel, rivet-ready panel among the cockpit area. Seating has sporting attached to the frame. Upholstery is navy vinyl. Leather-grain imitation grease and fire resistant, and more durable than leather. Back is upholstered with contrast foam rubber and pad-stitched. A large supporting flange is on the right side of the back. Engine is Continental 7-8 cubic inch Red Seal 2 h.p. 4 cycle. Long lasting 3/4" chain drives rear axle. Engine mounted in quickly removable tilt panel. Safety engine hatch cover and gas and driver. Plenty of room for mounting any class of stock or modified engine. The wheels are quick-change style with quarter midget size pneumatic tires.

PUT YOUR BOY IN THE BEST!

This is the DMC quarter midget racer . . . designed to win . . . fast-paced in the straightaway, stable and solid in the turns . . . with a suspension system that was race track bred and tested. A consistent winner . . . ruggedly built to protect your child in this exciting, healthful outdoor sport. No finer automobile, large or small, tours any track. DMC is fast, strong . . . and safe! Put your child in the best.

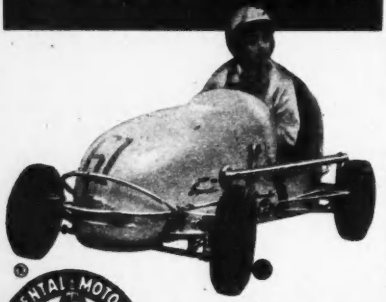
A JOY TO SEE. Much of the enjoyment of quarter midget racing comes from the beauty of the machines. The DMC is a picture of exciting and rich colors, chrome parts finished to a high luster, upholstery of obvious quality and beauty . . . here is a perfect miniature. The body is a tempered fiberglass compound-curved replica of the Indianapolis type.

The DMC is the safest fast car on any track!

WRITE TODAY FOR FREE ILLUSTRATED BROCHURE:

DEVICE MOTOR CO. INC. DEPT. CC-8
12019 VOSE STREET, NORTH HOLLYWOOD, CALIF.

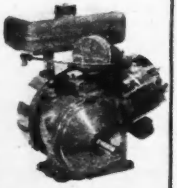
MAKE A
"CONNIE"
THE
HEART OF YOUR RACER



CONTINENTAL MOTORS
Power Plants for the Nation
AMERICA'S STANDARD

There's no finer power source for Quarter-Midget Racers than Continental Red Seal, famous since 1902 for dependability and long life. Red Seal heavy-duty air-cooled models are built to get up and go. Greater piston displacement provides power in excess of their rating, plus low-speed lugging ability to eliminate stalls. Exclusive Contex external ignition system speeds and simplifies adjustment, and doubles life of points and plug.

FOR DESCRIPTIVE BULLETIN AND ADDRESS OF YOUR DEALER, DROP A CARD TO "MIDGETS," AT THE ADDRESS SHOWN BELOW:



AU SERIES

Continental Motors Corporation
INDUSTRIAL AIR COOLED ENGINE DIVISION
12811 KERCHEVAL AVE. DETROIT 15, MICH.

SHOPPING

McHAL MIDGETEER HELMET

Safety helmets are the best protection you can get for those quarter midget drivers. These "McHal Midgeteer" helmets are designed specifically for that purpose — to protect the youngsters. Sturdily built, these helmets will withstand a terrific shock. Price of helmet is $20.00. With visor $22.50. With face shield $24.50. Write: McHal Enterprises, 725-cc North Prairie Ave., Hawthorne, California.

COMPLIMENTS OF HORNET PISTON MANUFACTURING COMPANY
AND
HORNET DISTRIBUTING COMPANY
3460 Chestnut Avenue, Fresno, California

RPM of ONE QUARTER MIDGET RACER ENGINES determined by timing of one lap on standard 1/10 Mile track.

5.733 Engine to gear box ratio and 22" Tires.

Speedset to Speedset Ratio, Formula and Engine RPM

Time to Elapse	29 to 14	28 to 15	28 to 14	28 to 13	28 to 12	27 to 12
	29SPD 28T/ Lap	28SPD 28T/Lap	28SPD 28T/Lap	28SPD 28T/Lap	28SPD 28T/Lap	27SPD 28T/Lap
4.6	9953	8827	9089	9723	10534	8706
4.5	9668	8572	8795	9479	10235	9063
4.4	9901	7932	8496	9253	9934	8184
4.	8890	7705	8255	8890	9531	7960
3.5	8539	7596	8139	8705	9295	7868
3.4	8332	7491	8026	8643	9363	7739
3.3	8198	7388	7916	8585	9215	7618
3.4	8088	7288	7809	8530	9330	7539
3.5	7980	7193	7705	8297	8 89	7479
3.4	7875	7096	7603	8188	8971	7338
3.7	7772	7003	7504	8082	8755	7258
3.8	7673	6916	7408	7978	8643	7344
3.9	7576	6827	7314	7877	8534	7053
4.	7481	6742	7223	7779	8427	6968
4.1	7389	6657	7134	7589	8223	6795
4.2	7295	6610	6979	7408	8026	6633
4.3	6999	6573	6739	7236	7839	6479
4.4	6931	6129	6566	7071	7661	6332
4.	6650	5992	6470	6914	7491	6193
4.6	6576	5863	6251	6764	7328	6058
4.7	6503	5737	6137	6620	7172	5928
4.8	6234	5614	6019	6480	7022	5804
4.9	6307	5508	5896	6350	6879	5661
5.0	5985	5393	5778	6223	6742	5572

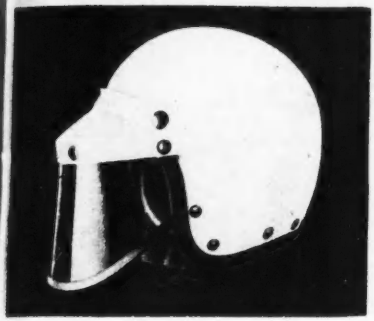
Example of Use of Formula - Ratio 28 to 14 at 30 sec. per lap $\frac{28SPD \times 28T}{30} = 5985$ RPM

Distributors of Curtis Kraft, Squalle, Go-Kart, Hornet Mite, Offcastle, Bean, Doll Engines, Hornet Engines, and all other accessories for Quarter car operation.

LIGHTWEIGHT RACING SLUGS

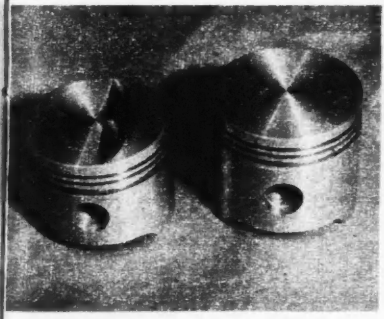
Lightweight racing pistons. Make for better performance in your street machine too. Virgin Alloy, Permanent mold cast. Available in stock or stroked type. Chev V8 to ½" stroke, Olds ⅛" stroke. These pistons are Nitro Proof, and supplied in matched sets. Chev pistons are relieved for use with big valves. Specify bore and stroke desired. Venolia Piston Co., 432 So. Victory, Burbank, Calif., cc.

AROUND



FREE—QUARTER MIDGET GEAR RATIO CHART

Hot off the press—Hornet Quarter Midget Distributing Company has just announced completion of a new and informative one-of-a-kind sprocket to sprocket gear ratio chart. Determined by timing of one lap on standard 1/20 mile track. A must for all QM participants who wish to know just what gear ratio to employ for any track—dirt or asphalt. For free chart write: Hornet Distribution Company, 2660-cc Chestnut Ave., Fresno, Calif.



WELD IT YOURSELF IN A JIFFY!

Weld, cut, braze, solder IRON, STEEL, BRONZE, BRASS, ALUMINUM & OTHER METALS . . .

Auto, truck, shop and farm equipment break-down always cause annoying and costly delays. Don't let them bother you. Get a Dynamic Arc Welder. With the Dynamic you can also make your own wrought iron household and lawn furniture and many knick-knacks. You can do expert work on your very first job. Operates from any properly wired 110 volt AC line. The handiest tool in your workshop. A Dynamic Welder will save its low cost of only $38.50 f.o.b. in both time and money. Literature on larger equipment on request.

EASY PAY PLAN

Low down payment. Pay as you weld. Sold on money-back guarantee. Send for details. Complete outfit only

$38.50
f.o.b. factory

DYNAMIC INDUSTRIAL type transformer Arc Welder 75 amp. output for Industrial or Workshop use.

DYNAMIC WELDER CO.
Dept. D-64-H, 1808 S. Federal
Chicago 16, Ill.

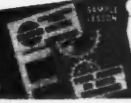
Free Details and "How to Weld"

MAKE MORE MONEY IN AUTO MECHANICS AND DIESEL

You are needed in auto garages, airplane factories, farm shops, experimental and government labs, wherever cars, engines, and trucks are repaired and serviced. National Schools Shop Method Training prepares you at home, in spare time, for these fascinating opportunities. You get everything you need, including lessons, diagrams, manuals, consultation privileges, graduate employment service. Low tuition; pay as you learn.

YOU GET AND KEEP ALL THIS EQUIPMENT

NATIONAL SCHOOLS
LOS ANGELES 37, CALIFORNIA



BOTH FREE

NATIONAL SCHOOLS, DEPT. #B1E-88
4000 S. FIGUEROA ST., LOS ANGELES 37, CALIF.

Rush free Auto Diesel "Opportunity" Book and sample lesson. No salesman will call.

NAME_____ AGE_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

☐ Check if interested ONLY in Resident Training at Los Angeles.

VETERANS: Give date of Discharge_____

J. C. Whitney & Co., Leads Them All! Your Satisfaction Guaranteed or Money Back

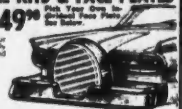
NEWEST 1958 CONTINENTAL KITS & FACE PLATES

A New Idea in Continental Kits that are Modern, Practical and Different. All Custom Fit.

Kits with Solid or Open Face Plates, as you desire.

$49.90

Pict. Your Own In-Dividual Face Plate Below.



These new Customized style Continental Kits give your car a smart new appearance. Each kit has a specially designed locking device to hold the tire carrier rigid and is constructed to give long, trouble free service. The balanced carrier folds back, providing easy access to the trunk. ICC comes to you complete including extensions, gravel shields, tire ring, detailed instructions and fittings to assure an easy installation. All parts are prime finish with a choice of stainless steel or prime tire ring. Face Plate is ordered separately—it is not included in the kit.

49-58 Chev. (All exc. '57 Corvett)
49-50 Ford (All exc. '50 Skyliner)
52-58 Mercury
49-58 Plymouth, all
56-58 Dodge, Mont.
1957 Thunderbird

No. 506—With Prime Tire Ring $42.95
No. 507—With Stainless Steel Tire Ring $51.95

Continental Kits Do Not Include Face Plates. Pict. Your Own Individual Face Plate Below.

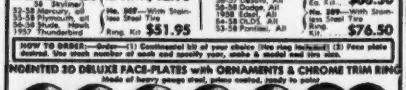
34-58 Buick, All
53-58 DeSoto, All
56-58 Dodge, All
1958 Edsel, All
54-58 OLDS, All
53-58 Pontiac, All

No. 508—With Prime Tire Ring $66.50
No. 509—With Stainless Steel Tire Ring $76.50

HOW TO ORDER:—Order—(1) Continental kit of your choice (Use ring included) (2) Face plate if desired. Use stock number of each. Also, make a model and year check.

MOUNTED 3D DELUXE FACE-PLATES with ORNAMENTS & CHROME TRIM RING

Made of heavy gauge steel, gloss coated, ready to poke



No. 510—Less the ornaments. Each $9.98

No. 511—With 2 prgs Spinner and Chrome ring. Each $12.98

No. 512—With 3 prgs Spinner and Chrome ring. Each $13.98

No. 513—With Star-fire Spinner and Chrome ring. Each $13.98

No. 514—With Edsel Spinner and Chrome ring. Each $13.98

No. 516—Less the ornaments & ring. Each $7.98

No. 517—As Above less the Chrome ring. Each $11.68

No. 518—As Above less the Chrome ring. Each $10.98

No. 520—As Above less the Chrome ring. Each $11.98

No. 521—As Above less the Chrome ring. Each $11.78

Solid or Open Face Plates Heavy gauge steel, primed ready to paint. Choice of Open Face (hub cap shown) or Solid Face (covers the entire hub). Specify your choice & give year, ins. Each $6.95

No. 515—Each $6.95

Face Plates May Be Ordered Without Continental Kits

BE SURE TO SPECIFY TIRE SIZE.

New Cruiser Fender Skirt

A new concept in fender skirts.

Styled to Continue the Long Flowing Lines of Late Model

Can. Chrome Bead Trim Adds Elegance. 61" Long—54" Rigs.

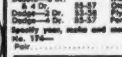
Designed to cover the flare and beading of the fender. Blends into the fender and gives body, and lends the appearance of a continuous flowing, contoured unit. Gives early models a late model look.

Chrome bead trim along top edge adds an additional distinctive touch. Rubber beading prevents rattle — positive locking device. For full wheel openings.

Chev —2 Dr. 55-57
Chev —4 Dr. 55-57
Chrysler—2 Dr. 55-56
Chrysler—4 Dr. 55-56
Ford—2 Dr. 55-57
Ford—4 Dr. 55-57
Dodge—2 Dr. 55-57
Dodge—4 Dr. 55-57
Ford—2 Dr. 49-51
Ford—4 Dr. 49-51
Mercury—2 Dr. 49-51
Mercury—4 Dr. 49-51
Olds.—2 Dr. 54-57
Olds.—4 Dr. 54-57
Pont.—2 Dr. 55-57
Pont.—4 Dr. 55-57

Specify year, make and model when ordering. No. 170—Pair $28.95

Brand New Car Plaque



Ground raised letters & design. Paint baked on and handpolished. Leatherette-like background. Rustproof—Easy to mount. Heavy cast aluminum. Long size 3"x9".

No. 523—Each $2.98

Chrome-Like Finish

• An Amazing New Do-It-Yourself Process.
• Gives A Reflective Chrome-Like Finish.
• Saves Time and Money. Instead of replacing worn chrome can be refinished to a brilliant lustre to match original finish. No need to buy costly chrome in the car or spend a large amount of money to have parts replated. Chrome-Like Chrome makes parts can be refinished to their original lustre like a brand-new part. Each kit contains all the necessary material and easy to follow instructions. Can be applied to metal, wood, rubber, plastic or composition of fiberglass. Can be applied over chrome or other metal parts that are pitted. Rubber and plastic items can be refinished to look like chrome. Chrome finish will bend. Withstands extreme heat or cold. Specify for use on chrome, metal, wood, rubber or plastic.

No. 524—Each $4.98

Spray Can COLOR CHROME "TONER" COLOR PAINT

THE LATEST CUSTOMIZING RAGE

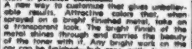
Exceptional transparent colors for use on any bright metal such as chrome, nickel, stainless steel or polished aluminum.

A new way to customize that gives unbelievable results. Attractive colors that, when sprayed on a bright finished metal, take on a translucent look. The bright finish of the metal shines through and carries the beauty of the finish with it. Any bright part on the car can be finished—hub caps, grille, bumpers, polished or chrome engine accessories, etc. Use individual colors or a combination of colors. Four colors to choose from—red, blue, green, gold. No special preparations need be made—just their surface is sprayed must be clean of dirt and wax.

No. 243 Specify color Gold Blue Red Green

POSTPAID Per Can $1.98

REPAIR and RESTYLE with Fiberglass CUSTOMIZING KITS and ACCESSORIES



Do It Yourself Kit

Full instructions book included with each kit. No heating, no welding, no soldering, no special tools needed. Fiberglass is acid-proof, alkali-proof, rot-proof, weatherproof. Will not rust, rot, or deteriorate. Will not dent. Easily repaired if damaged. Works perfect with metal as it doesn't shrink.

FIX-IT KIT — Covers 3 Square Feet. For car repair, dashrewing, customizing. Also useful in home for insulating gutters, water tanks, etc. Includes 2 Sq. Ft. Cloth, ½ oz. Resin Epoxy, ½ oz. Hardener, bag of flox.

No. 19—POSTPAID Each $3.78

For 1952-56 FORD All Models 6 Pc. TAIL LIGHT KIT

Before

Gives That 1958 Style Look! Fits '52-'56 Fords

Kit consists of 2 lenses, 2 chrome rims, 2 adaptor plates. Easily installed in place of present rims without drilling or cutting. Can also be installed in place of 1957 rims without further alteration. Lenses are red with white backup lights. Adds length to tail light assembly 1½". Specify year.

No. 244 Each $2.95

FRENCH TAXI BELL

JUST LIKE THOSE ON THE STREETS OF PARIS

6 & 12 VOLT

The newest warning sound - - imported from France.

Gives a loud clear ringing alarm when you press the horn button. Polished ball with mounting bracket is 4½" high, 3" wide with mounting bracket. Easily installed.

6 Volt
No. 534 SPECIFY 12 Volt Each $6.50

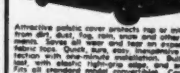
CONVERTIBLE RAINCOAT

Quick, Slip-On Protection in Any Kind of Weather For Convertibles

Attractive plastic cover protects top or interior from dirt, dust, fog, rain, snow and other elements. Opens all around and keeps out drafts. Fabric tops. Quick, easy, inexpensive protection with one-minute installation. Fits any car, with elastic tightening edge, and snap fasteners all around rear window. Can be used when top is up or down. Also handy as a cover for plate glass, small boats, furniture, baby carriages and many other things. Folds compact in plastic bag for storage.

No. 574 Each $3.95

Spun Aluminum SNAP-ON RACING WHEEL DISCS



Designed for beauty — Engineered for speed. More speed—cuts down wind resistance. Fits on securely to wheel—will not affect wheel balance. Can't shake or work off. These new spun aluminum racing wheel discs—designed to match popular curved surface—reduces wind resistance to a minimum—has no indentations or protrusions. Their sleek—graceful lines—smooth surface—adds beauty to any car. Easy installed on any 14", 15", or 16" wheel. Sold four each in set of 4.

Specify 14" 15" or 16"

No. 527 $12.95
No. 576 $3.79

PLASTIC STEEL

80% STEEL—20% PLASTIC

APPLIES LIKE PUTTY—HARDENS LIKE STEEL

ADHERES TO ALL METALS AND GLASS. Can be worked like plastic—drilled, tapped, filed, sanded, shaped, molded, etc.

A new material with unlimited uses. Can be applied to practically any surface. Hardens rock hard. Apply like putty with any flat item and allow to harden. Can be worked like plastic—drilled, tapped, filed, sanded, shaped, molded, etc. Can also be used as a bonding

PIN STRIPING

The Newest & Latest Custom Design

Ready made original design stripings—easily applied in minutes. Can be applied on any clean, dry surface. Will not chip, peel or crack. Kit contains ribbon decals in nine different designs, up to 8½" long. Eight colors to choose from: Red, white gold, powder blue, dark blue, light green and dark green. One kit will stripe an entire car, fenders, trunk lid, hood, skirts and other parts. Specify color when ordering.

No. 320—POSTPAID

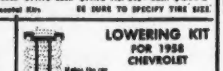
White	Light Green	Per
Gold	Light Green	Kit
Black	Dark Green	$1.49

Hollywood" WOLF WHISTLE

Intake Manifold Whistler Gives the Wolf Call. Imitates a Barking Dog and other Effects. Simple to install works off the intake manifold.

No. 41—POSTPAID $3.42

LOWERING KIT FOR 1958 CHEVROLET



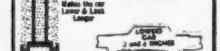
Makes the car Level & Looks Longer

Adjustable 2" to 4" drop. Lowers center of gravity. Gives car that ultra-low-custom look. Complete kit with 4 specially designed brackets. Specially formed to fit 1958 Chev rear coil spring. Includes 4 special bolts & nuts. Can easily be installed. No alterations to frame necessary. Easy to install—no alterations to frame necessary.

No. 535 —Kit $5.35

Color Dye for Lamp Bulbs

Customize Your Car With Colored Instrument Lights.



This is a permanent transparent dye that will adhere to lamp bulbs. Not a cellophane covering. Use on dash lights, tail lights, stop lights, lanterns and radio panel lights. Simple to use —applies with fingers. Furnished in each color several bulbs. Available in RED, GREEN, BLUE and VIOLET. State color wanted when ordering.

No. 765 Each $1.00

TRANSISTOR TACHOMETER

You Don't Have To Be A Professional Driver to Measure Your Speed and Use The New Miniaturized Deluxe

Drive by instrument instead of by sense! Stop wasting power — Stop wasting gas. Install a transistor tachometer — it's easy, most anyone can do it.

Increase Gas Mileage up to as high as 25%
Increase Engine Life.
Increase Engine Efficiency.
Increase Driving Pleasure.
Increase Acceleration.
Reduce Engine Maintenance.
Reduce car operating expense.
Reduce Repair Bills. Pays for itself many times.
A Real Driving Guide—It's easy to use—Calibrated dial tells all at a glance. Green calibrated scale indicates the most economical & efficient speed range—Red scale warns against dangerous speeds. Yellow scale shows the two worst enemies of efficient engine operation.
Tells you when your engine is not performing efficiently when you need a tune-up or adjustment—gives you precision tune-up information at a glance.
This new ultra modern Transistor tachometer with all electric illuminated dial is designed for the average driver—easy to see—easy to read—easy to hook up (ex. 4 wire) for hot rod, racing, truck and cab drivers. Installation is easy—mounts on universal metal strap. Dial is 3" x 3" x 4". Its shallow depth permits installation in most any dash or panel. Can also be mounted under dash or on steering post. Self contained—requires no sensitive guaranteed movement. For long life and highest accuracy. Full 0 to 8000 RPM range—no needle oscillation or confusing overrun. Full view dial provides instantaneous reading—easier to read than a clock.

No. 124 Each $19.95
Specify 4 cyl or 6 cyl
4, 6 Volt, or 12 Volt

Postpaid

Under dash mounting bracket for above tachometer No. 125 Each $3.00

PHONE-A-LITE

A NOVEL TROUBLE LIGHT

Mounts on the Dash.

An exact replica of a telephone with a powerful light in the earpiece that throws a beam 300 feet. Comes complete with a bracket that attaches to dash, giving the impression of a phone on your car. Plugs into cigarette lighter—10 feet of cord permits use of light outside of car for emergencies. For all cars 6 or 12 volt.

No. 414 6 volt Each $4.50
12 volt Each

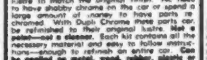
AUTO FABRIC SPRAY

For a new looking car interior. Brightens and freshens faded and worn fabrics. 12 oz. can covers 40 sq. ft. Can be used on headliner, door panels and carpets. Dries quickly. Will not rub or fade. Can hi-tone upholstery fabrics. Choice of tan, light brown, tan, dark and light green, light gray, yellow, maroon, red and light gray, yellow, maroon, red and white.

No. 54 Specify color when ordering $2.25

BUTTON DOOR KIT

Rebuilt Shock



34p BURNING OUT?

FAMOUS

ENGINE OVERHAUL KIT

- POSTPIES YOUR OIL
- REJUVENATES WORN MOTORS
- COMPLETE CYLINDER AND RING JOB WHILE YOU DRIVE

$4.95

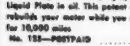
Reg. $7.00-value

Do-it-yourself in 10 minutes! Save on repairs. Simply drop Postpies into plug openings, pour Liquid Plate in oil. This potent combination rebuilds your motor while you drive. Good for 10,000 miles

No. 152—POSTPAID $4.95

Adjustable MAIN JETS

For Stromberg 97, 48-51 and Chandler Grove, Holley 94-30A-B1 Carburetors



Eliminates time consuming—costly carburetor rear down.

No need to remove carburetors to change from street use to track or road use. Close the jet for exceptional economical street use—open for competition or high speed use. Jets sold per pair—instructions included

A turn of the adjusting bolt reduces or enlarges the opening of the main metering jets.

For Stromberg 97, 48, 81 Carburetors ..... POSTPAID ..... Pair
For Chandler Grove, Holley 94, 59A, 88A ..... No. 322 A $3.25
No. 322 B 2.25

BULL NOSE ORNAMENT

For Customizing Ford, Mont., Chev. Pontiac, & Plym.

Specify Car & Year when ordering.

Replaces factory hood ornament. Blends perfectly into moulding.

No. 49—Ford 47-54 ..... Chev. 47-54
Merc. 49-51 ..... Plym. 47-54
Pont. 50-51
POSTPAID each only $1.95

CUSTOM GRILLE BAR

FORD MERCURY CHEVROLET PLYMOUTH

Chrome plated heavy gauge steel. Replaces original bars. Gives car New appearance.

No.	Body Type	
No. 300—49-54 Ford	.....	POSTPAID $10.95
No. 301—53-54 Chev.	.....	POSTPAID 12.95
No. 302—49-50 Merc.	.....	POSTPAID 12.95
No. 303—1951 Merc.	.....	POSTPAID 14.95
No. 304—1953 Plym.	.....	POSTPAID 14.95

Rebuilt Shock ABSORBERS

All Pass. Cars 1926-52

Factory rebuilt and adjusted—perfect performance guaranteed. SPECIFY MAKE & YEAR

No. 6 (—For Front) (—For Rear) Pair $9.95

AH-OOO-GAH Chromed HORN

Here it is for the sport car enthusiast. Not a vibrator or other substitute but a genuine motor driven horn.

No. 60—POSTPAID $12.60

Made 6 or 12 VOLT

FOR ALL CARS INCLUDING 1958 Factory Duplicate — Custom Fit FENDER WELL FENDER SKIRTS

PITS INSIDE AND FLUSH WITH FENDER

- Same as original equipment
- Perfect fit
- Prime finish
- Heavy Gauge steel
- Locking lever handles

SPECIFY YEAR, MAKE & MODEL

Stk. No.	Make	Type of Bottom	Pair
205—50	BUICK	Plain	$12.95
207—54-54	Super & Roadmast. exc. Estate Wagon	Flared	12.95
54-55	4 dr. Sed.	Plain	10.95
217—54-55	Super & Roadmaster 4 Dr. Models	Plain	10.95
216—54-56	Special & Cent. Fins Large Opening only.	Flared	14.50
216—1957	All	Flared	14.50
	CHEVROLET		
206—49-54	All	Plain	11.95
206—55-58	All	Flared	11.95
	DODGE		
207—55 & 57		Flared	12.95
207—54-56	All	Plain	11.95
	DE SOTO, CHRYSLER		
210—1957	All	Flared	12.95
207—57-58	All	Flint	12.95
	FORD		
202—52-56	All	Flared	10.95
202—57-58	All	Flared	11.95
203—57-58	All	Plain	10.95
	MERCURY		
202—52-54	All	Flared	10.95
202—55-58	All	Flared	11.95
	OLDSMOBILE		
213—54-55	Model 98 Holiday	Flared	14.95
215—1955	Model 98	Flared	14.95
213—1956	All, 57 88	Flared	14.95
207—1958	All	Flared	11.95
	PLYMOUTH		
208—53-55	All	Flared	11.95
207—56-58	All	Flared	12.95
208—57-58	All Wagon	Flared	11.95
	PONTIAC		
207—49-52	All	Plain	12.95
206—1957	Sta. Wag. All Mod.	Flared	11.95
207—57-58	All exc. 8 Q N.	Flared	12.95

MINI-SUPERCHARGER

MINI-superCharger consists of a revolving impeller "blower" automatic air "breather" valve which mixes an increased volume of air to the fuel charge with whirlwind force. This atomizes and expands the gas molecules so that the improved mixture enters the cylinders in a more powerful highly explosive state

The MINI-superCharger stimulates over-rich mixtures and fuel waste. Better, cleaner combustion is obtained resulting in reduced "ping," less oil dilution, less valve troubles and longer engine life. Eliminates "Vapor lock." Precision built of bronze and aluminum. Easily installed. Satisfaction Guaranteed. Specify year, make, model of car or truck and make and model of carburetor.

Type Carburetors

No.	Thread	Each
211—2 Bolt Single	POSTPAID	$11.95
213—2 Bolt Dual	POSTPAID	11.95
213—4 Barrel Quad	POSTPAID	12.95

NEW SOUND SENSATION

THE ORIGINAL ITALIAN BUS HORN

Genuine 12V

Quality tested on all cars without 6 volt system

Electronic conversion kit that makes your stock horns sound like an Italian Bus. Splits stock horn sound into two notes—one high—one low—and multiplies it times a second when you hit your horn. Completely automatic. Just 3 simple wire connections. To be changed from 6 to car 12 volts or 12 to 6 Volts

No. 600—POSTPAID ..... Each $6.95

BUTTON DOOR KIT

FOR ALL CARS 6 And 12 Volt

No customizing job is complete without this kit. Completely eliminates door handles, doors are electrically opened by the mere touch of a button. Buttons can be mounted any place on the car. Complete kit with all necessary parts including buttons, wire and outside of door. Kit services two doors. Easily installed, complete instructions included in each kit.

No. 882—6 Volt $13.95
No. 881—12 Volt $14.95

MANUAL TRUNK KIT

Streamlines rear deck lines. Recessed handle, operate from inside of car. Complete with instructions and hardware. Easy to install.

No. 884—Fits Ford 36-52, Merc. 39-55, Chev., Buick, Olds, 49-55, All G.M. Cars 49-53, 54 Expr., Make and Model $1.45
POSTPAID

NEW EXHAUST CUT-OUT

Exhaust tone is controlled from the dash. Can be used as a cut out in the country & closed in restricted areas. Or may be used to operate two different toned mufflers. Well constructed of heavy extra steel. Strengthens the exhaust area.

No. 99—For All Exhaust Pipes 2" $2.89
No. 99p—For All Exhaust Pipes 2½" thru 3" $2.89
POSTPAID. Each

Weld-On Universal MUFFLER

Lowers the sound and car fan noise, for stability and cornering. Lowers center of gravity—gives low slung appearance. Easily installed—special "U" bolt arrangements to attach to Weld On Kit Pontiac, 41-55 Chevrolet, 49-57 Chrysler, 37-52 Desoto, 37-53 Dodge, 37-54 Plymouth, 49-57 Studebaker-Fraser, 47-51 Hudson, 48-54 Lincoln, 49-55 Mercury, 49-54 Nash, 41-54 Packard, 49-50 Plymouth, 37-54 Fargo, 49-56 Studebaker, 49-50, Willys, 48-54 all other cars & trucks with 1¾" or 2" side opening.

No. 873, For 2 Door $3.98
No. 874, For 3 Door $3.75
Kit

WILL FIT FOLLOWING:
Cadillac—54-58 Chrysler—53-57 DeSoto—52-56
Dodge—54-58 Packard—51-54 Plymouth—52-58
Studebaker—51-58 Ford—52-58 Mercury—52-58
with 2½" side openings
No. 8886—For 2 Door $4.95
Kit

HIGH COMPRESSION HEAD GASKETS

EXTRA THICK .032" SOLID COPPER

These copper gaskets are only .032" thick, 1/3 to 1/2 thicker as milling heads .060" to .080", and must use the motor to give accelerated speed and power. Will not affect stock distributor setting and model when specified. 6 and 8 V8 type two gaskets are furnished at no extra charge.)

Stock No. 51—POSTPAID $4.95

Dual-Triple MANIFOLD KIT

Do it yourself—save money—Install your own dual or triple manifold

Convert a dual or triple manifold you can't buy for your Car or Pick-up—Perform-

ance and increase your gas mileage as much as 25%. With this kit you retain all the fuel economy advantages of your stock manifold and at once you're present manifold is not required.

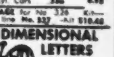
Easier to install than any similar kit—requires some welding—Complete—nothing else to buy. Includes two special dual carburetor mounting risers, (2) gaskets, easy step by step instructions, plus a special block off flange for converting a dual carburetor use or a triple for competition. Can be adapted to all carburetors and manifolds.

For Single Throat Carburetors

	No.	Per Kit
All 4 & 6 Cyl. Cars	221	$3.95
For Dual Throat 8 Cyl. Carburetors	226	4.95

PROGRESSIVE LINKAGE for No. 338 Three carburetors in line ..... Set $16.00

3" THREE DIMENSIONAL LETTERS and NUMBERS



To Chrome or GOLD Plate.

King sized letters and numbers given in chrome & gold "Mirror" finish over satin material that will not rust, scratch, discolor or tarnish.

Each figure is mounted on a heavy 16 gauge thick waterproof plastic backing for strength & easy installation.

Furnished in all letters A thru Z and all numbers 0 thru 9. When ordering, specify name and letters or numbers desired.

No. 338 A ..... No. 338 B—Gold
Specify: Select 3 or more $2.00

FREE!

260-page CATALOG—with 16 pages of last minute NEW items!

NEW LOW PRICES

THOUSANDS OF NEW ITEMS

1958 EDITION JUST OUT!

This giant 260 page catalog, packed with over 75,000 items for the automotive, truck, car, bus and custom car owner . . . is yours FREE with any order for items selected from this advertisement. If you just want the catalog, send only 25c to cover part of handling and mailing cost (refunded on your first order).

USE THIS HANDY ORDER FORM — MAIL TODAY!

JC WHITNEY & CO

1917 (C28) Archer Ave., Chicago 16, Ill.

I Enclose $ ..... to cover payment in full (or 25% deposit C.O.D.)

NOTE: WE PAY POSTAGE on items marked POSTPAID when payment accompanies order. You pay shipping charges on items not marked POSTPAID. If C.O.D. order, enclose at least 25% deposit, any balance plus shipping charges upon delivery.

Name .....

STATE—My car is a ..... Year ..... Model ..... No. of Cyl. .....

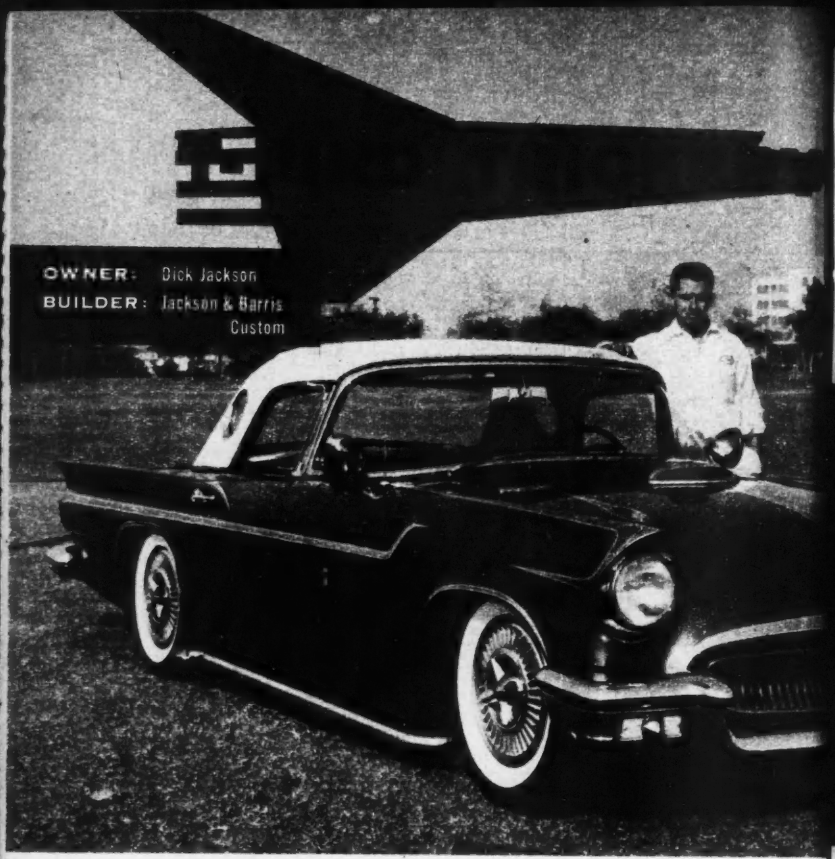
Address .....

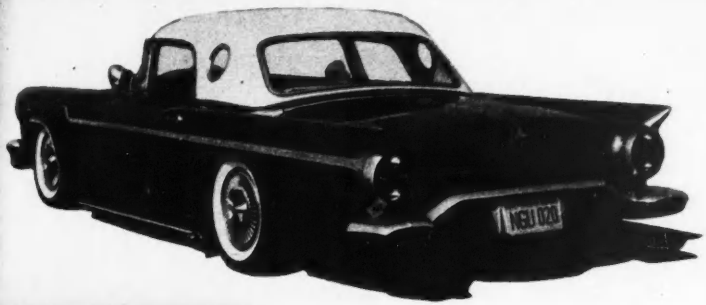
City ..... Zone ..... State .....

☐ Catalog sent Free with your order. Check here if you want Catalog only—Send 25c.

Skip following order as out-of-stock, substitute:	Quantity	Stock No.	Description	Price

JC WHITNEY & CO 1917 Archer Ave., Chicago 16, Ill. C28


OWNER: Dick Jackson
BUILDER: Jackson & Barris Custom



While employed at Barris Custom Shop, Dick Jackson created his own T-Bird disguise. Special vertical bar grille color chromed in gold now fills in cavity.

Lowered some four inches both fore and aft, '57 Bird takes on low silhouette appearance. Exterior paint and Jeffries' scalloping is of gold and bronze.

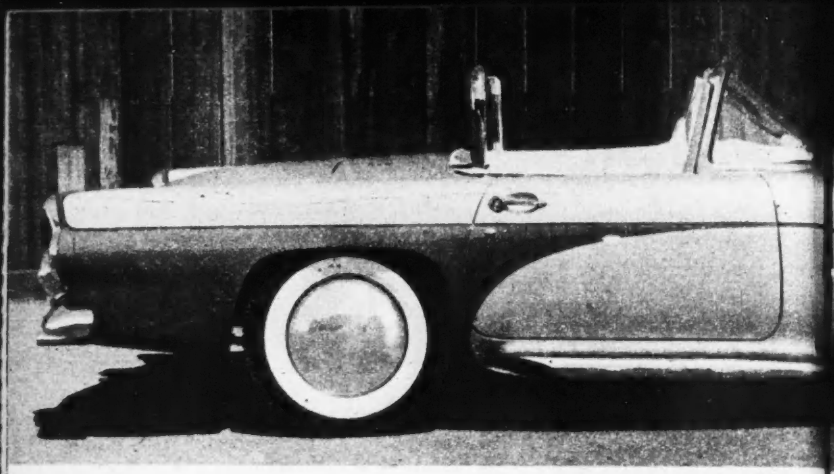
Top frontal view reveals Buick fender portholes in hood, expanded metal face screen in scoop, and elegant scalloping. Note pleat design in hardtop.

Photos by Al Paloczy

Jackson's taillight transformation utilized Cal Custom's new "Satel-Lite" lenses consisting of large red reflectors lens augmented by smaller Buick lenses and chromed accessory spinners.

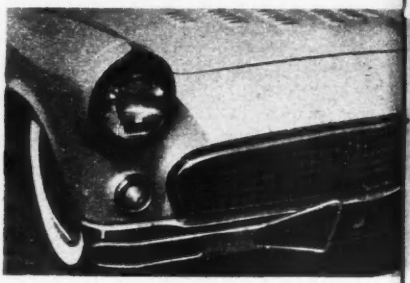
'55 Chev rims serve as basis for headlight treatment. Radical shades form scoop below lip. Park lights have small spinners.

CONTINUED

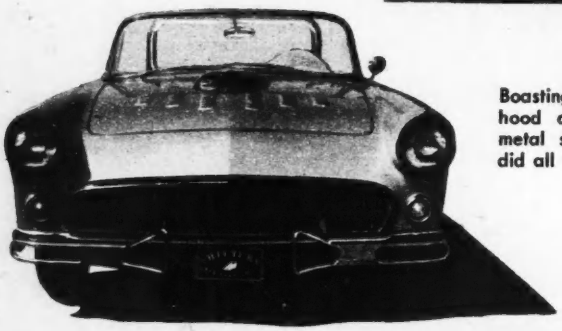


OWNER: Jerry Anolik
BUILDER: Owner

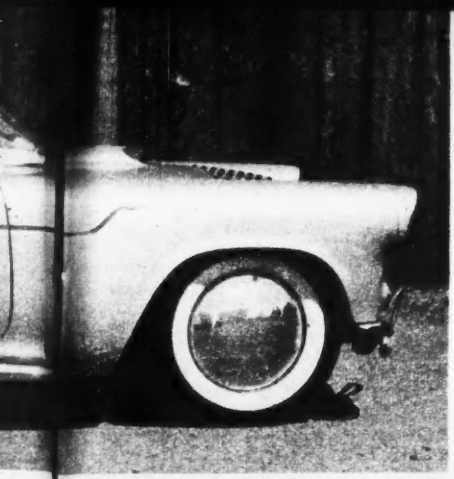
T-BIRD TRICKERY



Race-bred theme of Jerry Anolik's attractive Bird embodies functional nerf bars up front sans stock gravel shield. The grille, headlights, park lights remain stock, except for conservatively rendered scallops.



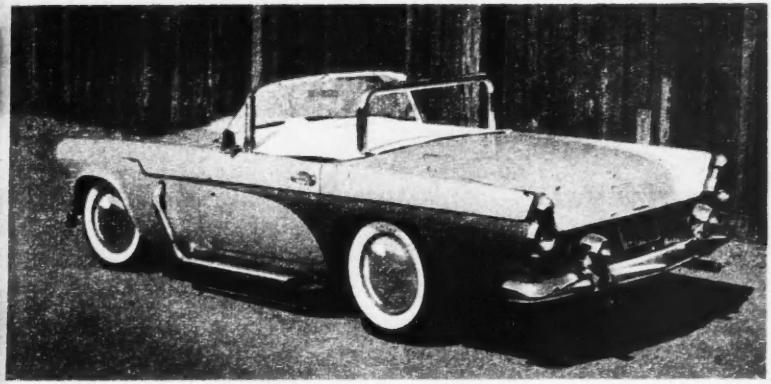
Boasting six rows of louvers, hood also employs expanded metal screen for scoop. Anolik did all work on the racey Bird.

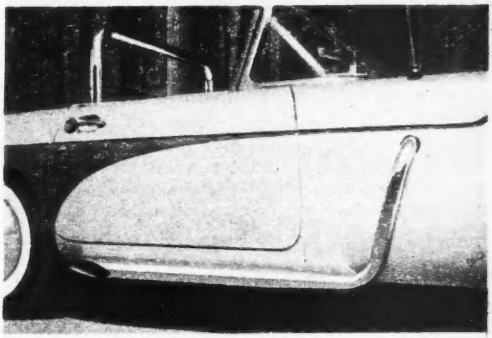


Red and silver scalloped paint proves effective for Bird's appearance. Moon disc wheel covers are featured. Roll bar is week-end warrior's drag strip equipment. Front end lowered slightly.

Bird's rear view employs popular '55 Merc station wagon taillights, front bumper guard filler plugs. Exhaust has been routed in conventional manner.

Photos by George Barris





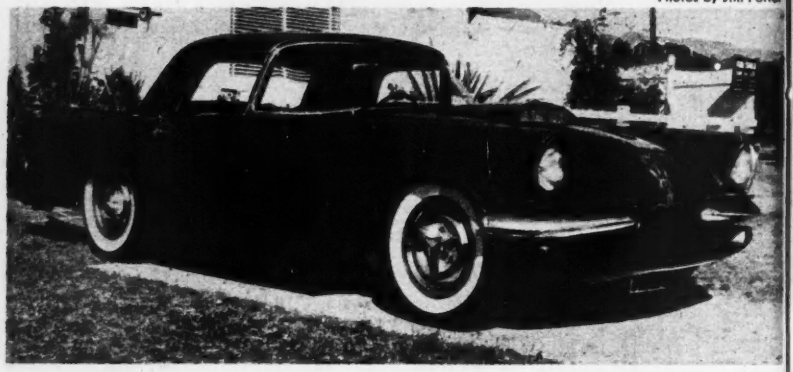
Neatly routed headers flow along body sides. Vann's Body Shop of Berkeley did painting.

CONTINUED

T-BIRD THUNDERBIRD

OWNER: Gil Avalos
BUILDER: Avalos Custom Shop

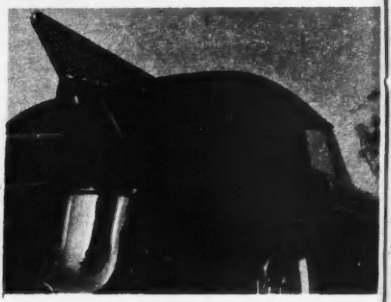
Photos by Jim Potter



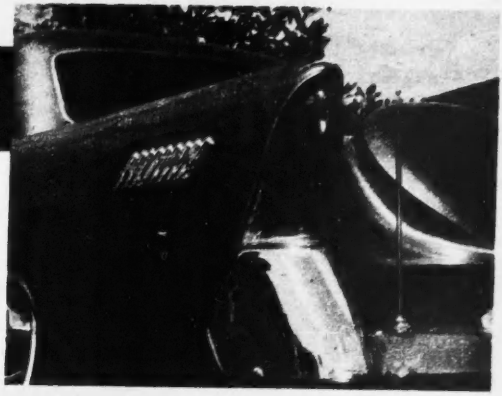
ABOVE • Special built tail-panel with license plate inset eliminates unnecessary frills. Expanded metal fins double as radio antennas.

CENTER • Re-formed Pontiac bumpers set into hand formed grille shell and hooded lights diguise front end. Note wheel wells.

Rear fenders are extended 7" to house the '56 Lincoln taillights. Exhausts are routed through '54 Cad guards serving as bumpers.

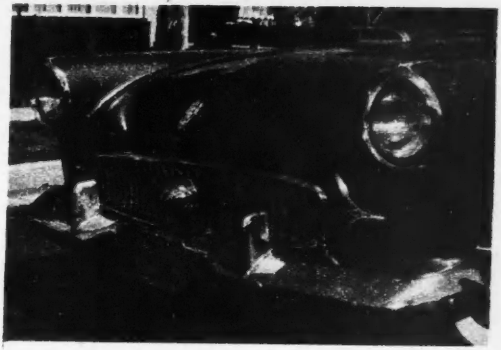


WNER: Al Gorton
BUILDER: Owner



Popular '56 Lincoln blinkers are used on this Bird also. This time fenders lengthened 12". Rear bumper is cut down '53 Kaiser. Antennas mount on rear bumper.

Tire cover is frenched to extended deck lid a la Continental. Skirts welded to fenders and '55 Chrysler lower trim enhance side appearance. '56 Buick hubcaps.

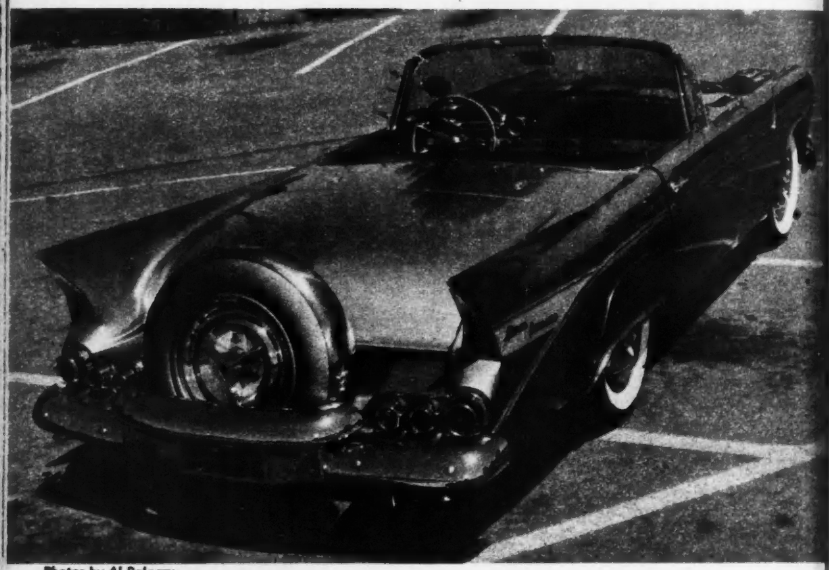


Grille cavity is closed slightly to fit snugly around a '55 Nash grille. '55 Olds rings are used on frenched headlights. Front bumper is sectioned '50 Stude.

CONTINUED

T-BIRD TRICKERY

OWNER: Aaron Ginsburg
BUILDER: Bill Prettyman



Photos by Al Paloczy

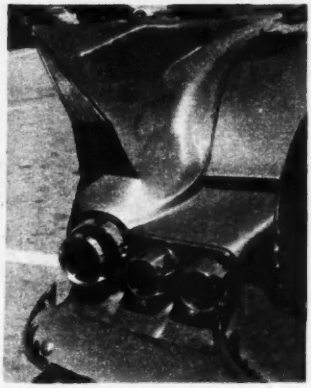
Extremely modified rear section loses Thunderbird look completely. Lengthened fenders swoop upward into pronounced tail fins. Continental kit is recessed into tail panel.

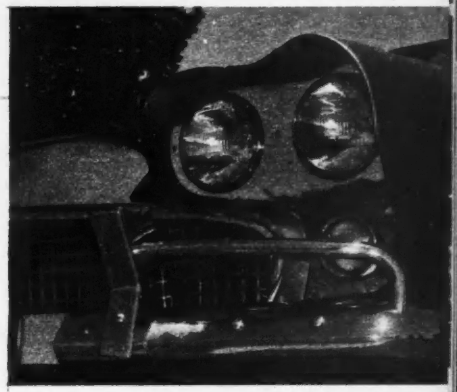
Father and son beam proudly at result of father's hobby — restyle designing. The T-Bird, which took only six months to complete, is used every day by Mr. Ginsburg.

BELOW, LEFT • Specially formed rear panel-ing holds total of six separate lights. Back-up lights and the directional signals work independent of taillights and of each other.

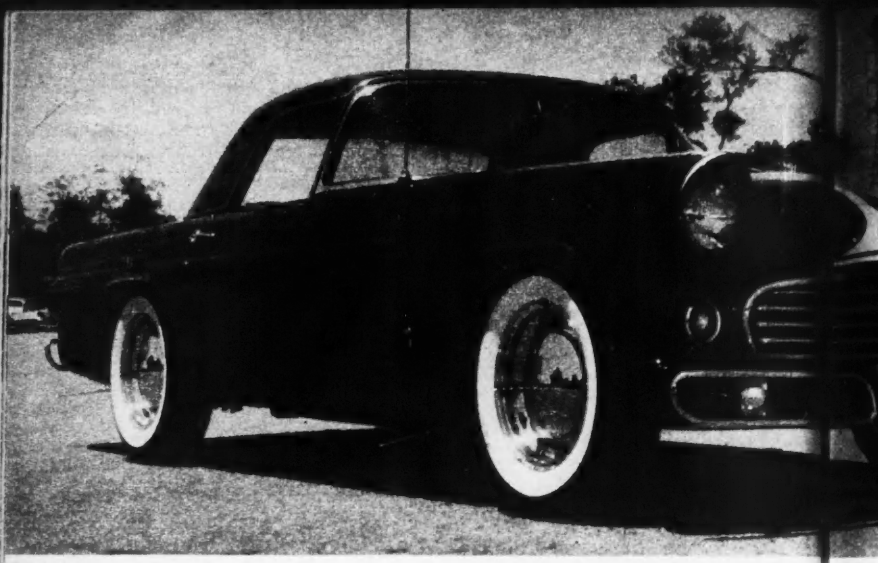
Two sets of stock T-Bird headlights are used for quadlight set up. Backdrop of chrome panels are removable for access to lights. Sheet metal "shades" follow units' contour.

Only untouched part of front end is the grille, which remains stock. Bumper has custom made guards and is relieved in the center to accept license plate. "Hooded" theme is carried clear across front end and down both sides. Fiesta hubcaps, special side trim used.





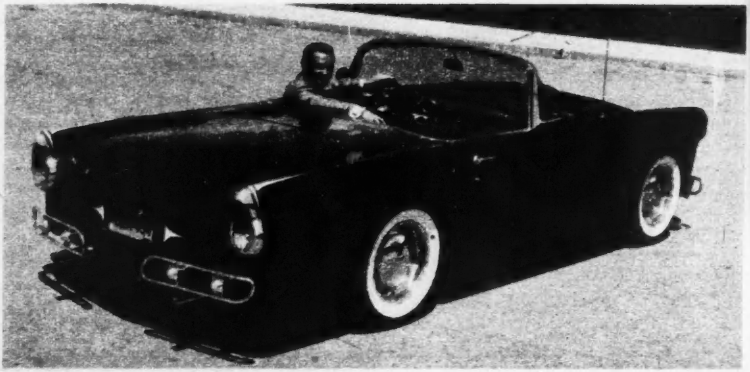
CONTINUED

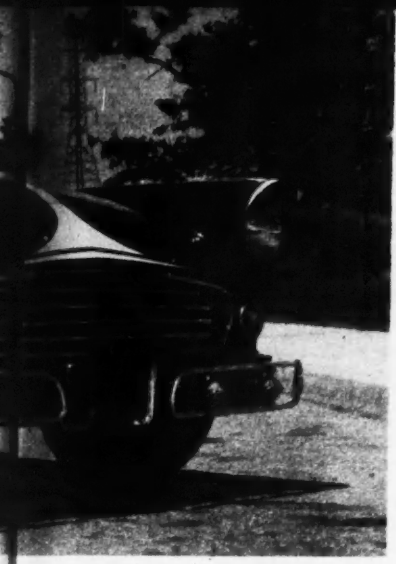


T-BIRD TRICKERY

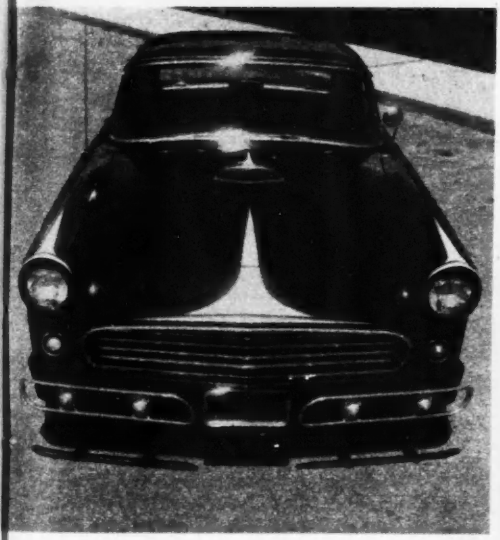
OWNER: Dick Day
BUILDER: Barris Custom

Car Craft editor's '55 Bird, built by Barris Custom Shop, features straight bar tubular grille in stock cavity, valanced gravel pan shields, tube nerf bars and reversed stock wheel rims done by Western Wheel & Rim of Oakland, California. Exterior color is Candy Red offset by white scallops. Fender flares matching that of front were added to rear wheel openings; skirts were discarded. Hood, deck lid and fender trim has been removed.





A four inch vertical valance added to stock gravel pan serves as backdrop for indivdual nerf bars. Valance also obscures ugly front cross member providing neat placement of front license plate. Note spinners on nerfs.



Taillights emanate from '55 Merc station wagon. Panel below deck has been filled and exhaust routed below nerf bumper-ettes. Rear gravel pan shield has also received the valanced treatment. Scalloping and pin striping done by Jeffries of Barris Custom.

CONTINUED

T-BIRD TRICKERY

OWNER: Don Tognatti
BUILDER: Harris & Charmichal Custom Shop

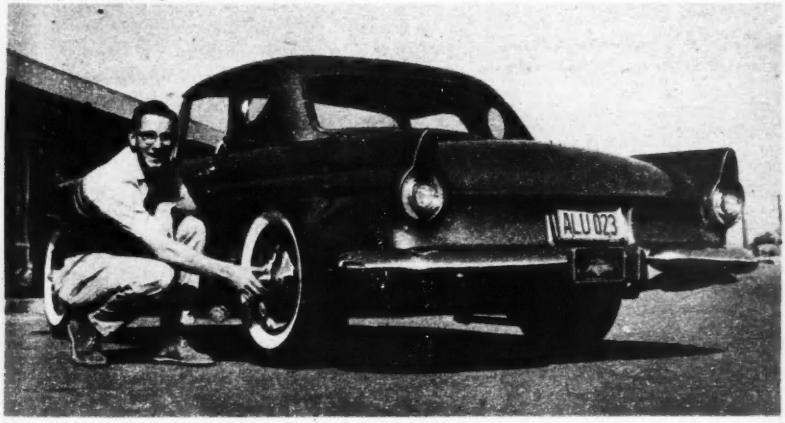
Well thought out combo of '57 Plymouth taillight lenses and Impala backup lights backed by perforated metal, good styling.

Multi-bar grille is formed of ⅜" tubular conduit. Special made gravel pan fills gap between body and '55 Pontiac bumpers.

Novel hubcap treatment has Corvette knock-off bars mounted on small Ford 'caps, topped off with bullets and beauty rims.

Tunnelled vertical quadlights have Jeep and fog lights installed in '58 Chevrolet buckets. Housings are filled out with perforated metal. Buick portholes allow more air to engine.

Photos by Dick Katayanagi



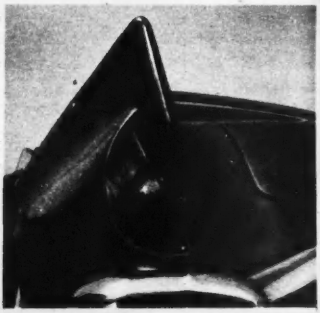
Shaved deck lid and molded rear paneling gives a clean look to rear view. As on the front, a '55 Pontiac split bumper is used. Lakes plug pipes run full length of rocker panels.

CONTINUED

FORD TRICKERY

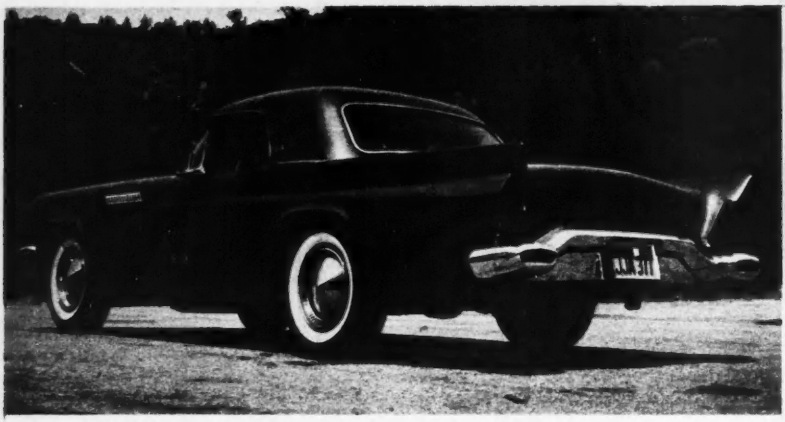
OWNER: Jim Routh
BUILDER: Bear Custom Shop

Filled hood and frenched grille cavity lead attention to the narrow bar grille made of 3/8" round rod. Headlight rims are painted leaving chromed ring.



Reworked rear fenders are setting for novel taillight treatment. '58 Oldsmobile lenses are used in conjunction with special fabricated lenses made of red Lucite.

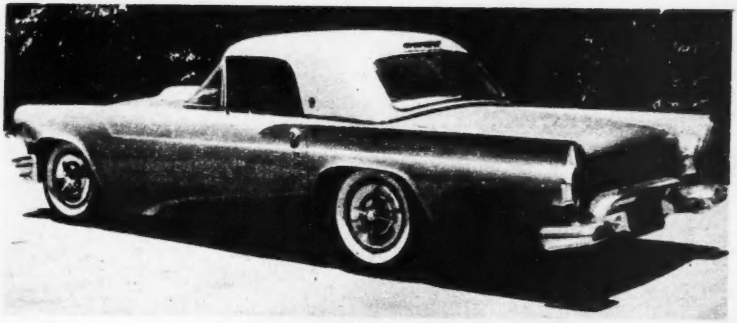
Rear fender wells are flared out to blend with front fenders. Electric buttons open shaved doors and deck.



OWNER: Jack Hetrishey
BUILDER: Westchester Body Shop

Complete taillight units from a '58 Edsel station wagon proved a natural in '57 T-Bird fenders. Bumpers notched for clearance.

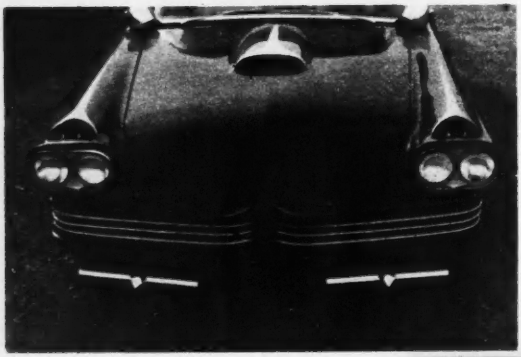
Removal of chrome louvers and replacement of door handles with push buttons cleaned off sides. Airscoop top styling is borrowed from a '58 Pontiac Bonneville. Again rear wheel wells are flared and radiused.



Photos by Jim Potter

From sports car to sports car — Corvette grille is substituted for T-Bird in molded cavity. The hood scoop is altered slightly. Hubcaps are '57 Dodge Lancers.

CONTINUED



Photos by Frank Faraone

Scooped quad Chrysler headlights and tubular grille V'd at center transform the Bird's frontal appearance to one-of-a-kind.

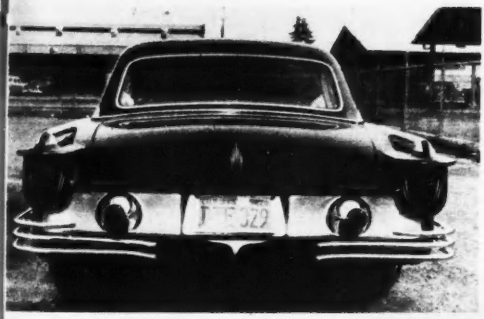
Closeup of headlight reveals '53 Merc rear fender trim bars employed in scoop. Candy Apple paint trimmed with gold/bronze.

T-BIRD TRICKERY

OWNER: Joe Castro
BUILDER: Bailon Custom Shop

Joe Castro's '55 Bird, built by Joe Bailon of Hayward, Calif., is one of the most radical concepts of custom T-Bird trickery. Built at the cost of $2000 the Candy Apple painted sportscar now features undated styling.

Lowered approximately four inches both front and rear, features are reversed Buick wheels with bullet spinners attached at centers, extensive reworked wheel openings, special built tubular bumper-ettes front and rear and filled-in door handles.



Rear portion of body has been reworked with filled panels and deck lid. Exhaust routing was left stock, only enclosed with Kaiser bumper guard housings. '53 Lincoln taillight lenses were fixed in inverted positions capped off with radical horizontal fender flairs blending with rear wheel openings. Note special built exterior exhaust headers.

Those new Fords can be made to fly!

By Don Francisco

FOLLOWING THE THEORY that a big, strong engine with lots of low-end torque couple to an automatic transmission and a rear axle assembly with a high (numerically low) ge ratio would give better fuel mileage than a smaller engine with a lower gear ratio, the For Motor Co. brought out six completely new engines for their 1958 passenger cars. The large engine in the group was the 430 cubic-inch Lincoln and Mercury and the smallest was th 332-inch Ford. Between thse were the 410-inch Edsel, the 383-inch Mercury, the 361-inc Edsel, and the 352-inch Ford.

A line drawn between the 383-inch Mercury and the 361-inch Edsel separates the famil into two groups of three. Those on the high side of the line are of the new angle-top cylinde block design in which the combustion chambers are located in the cylinders, and those o the low side are of more conventional design with their combustion chambers in their cylinde heads. The smaller engines are the subject of this article.

Many changes were made in the smaller engines to make them better than '57 models bu only a few of the changes have any effect on their ability to move a car down the road. Thos that are of minor importance to the guy in the driver's seat include moving the oil pump fro its position at the left rear of the engine and outside the crankcase to inside the crankcase a

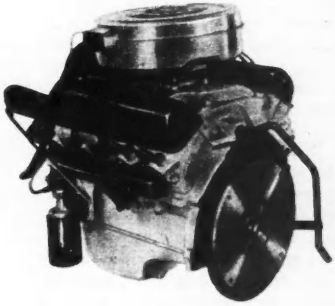
the front of the engine; moving the full-flow oil filter from a horizontal position at the left rear of the engine to a vertical position at the left front of the cylinder block; using a light steel stamping for the timing chain cover instead of the heavy casting used previously – this was made possible by redesigning the water pump so it could be bolted to the front surface of the cylinder block; designing the intake manifold so that it serves as a tappet chamber cover and part of the seat for the rocker arm covers – the rocker arm pushrods pass through openings drilled in the manifold; relocating the spark plugs in the cylinder heads to place them above the exhaust manifolds instead of below the manifolds as they were on previous engines – the plugs screw into the heads on an angle to place their spark gap in the position for best flame propagation; and moving the ignition distributor from the rear of the block to the left front of the block where it is much more accessible for service – the distributor sits in a nearly vertical position. One of the more radical departures from previous practice was changing the sequence of the valves in the cylinder heads so that no two exhaust valves are next to each other. Separating the exhaust valves eliminated possible sources of hot spots in the cylinder heads that could possibly cause detonation in engines with such high compression ratios. Engines released during the first few weeks of production had solid valve lifters, but now hydraulic lifters are standard.

Changes inside the engines that help them create greater torque and horsepower outputs include their much greater displacement, larger valves, and larger intake and exhaust ports and passages. These things add up to improved breathing ability in that the engines can take in more fuel and air in a given time than the smaller '57 models.

Engines of the new small series are bigger and heavier than the '57 Fords. Their crankshafts have main bearing journals and crankpins a full ¼-inch larger than those on '57 shafts. As in earlier engines, the shafts are supported by five insert-type bearings with copper-lead alloy bearing material. Two connecting rods are connected to each crankpin and each rod has its own insert-type copper-lead alloy bearing. The rods are short and husky and their upper ends have bushings for full-floating piston pins and transmit the combustion pressure exerted on solid-skirt aluminum alloy pistons to them. Pistons are of the autothermic type, which means that the amount they can expand when they warm up to operating temperature is controlled by their design, and they are tin-plated to increase their resistance to wear. Each piston has three rings. The oil ring is the steel-segment type with chrome-plated wear surfaces.

The camshaft is an alloy-iron casting and it is supported by five bearings and driven by a chain. Camshafts ground for use with solid lifters cannot be used with hydraulic lifters, and vice-versa. Solid lifters, standard in early production engines, are made of steel and are of the barrel type. Seats for the pushrods are in the bottom of the lifters. Pushrods used with these lifters are solid. Hydraulic lifters, standard in later engines, have their pushrod seats on their upper end, which causes the pushrods to be shorter. Pushrods used with these lifters are tubular with a ball bearing welded in each of their ends. The ball bearings fit the seats in the lifters and in the lower end of the adjusting screws in the rocker arms. Rocker arm ratio is 1.76 to 1.

Intake valve heads are 2.022 to 2.032 inches in diameter and exhaust valve heads are 1.551 to 1.561 inches in diameter. Both valves have ⅜-inch stems. The angle of the face on the intakes is 30 degrees and on the exhausts it is 45 degrees. Single springs of conventional design that are fitted with coiled flat steel dampers close the valves. These dampers are similar to those used for many years in Oldsmobile V8 springs. The tension exerted by the springs on the valve stems is 94 to 104 pounds at 1.82 inches, which is when the valves are closed, and 180 to 198



New FoMoCo V8 comes in four piston displacements; 332, 352, and 361 cu. inches.

CONTINUED

MORE GO FOR THE '58 FORD

pounds at 1.42 inches, which is equivalent to a valve lift of .400-inch.

Intergral valve guides, which are rapidly becoming common practice throughout the industry, are used in the cylinder heads. Combustion chambers in the heads are fully machined on all their surfaces. Machined combustion chambers have the same capacity, which gives the engine's cylinders a better chance to have identical compression ratios. Uniform compression ratios are important to maximum horsepower output and a smooth running engine. Spark plugs are 18 mm with projected-nose insulators. The advantage of projected-nose plugs, for normal driving, is that they have a greater usable heat range that prevents their fouling as readily as more conventional types.

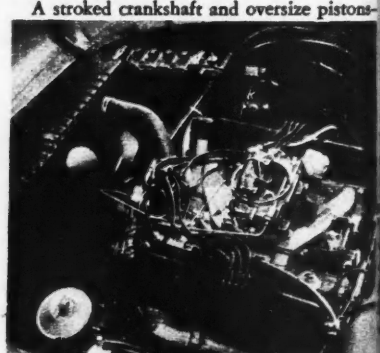
Ford 332 and 352-cubic inch engines have a cylinder bore diameter of 4 inches. Bores in the 361-inch Edsel are 4.05 inches. Piston stroke in the 332 is 3.3 inches and in the other two it is 3.5 inches. Compression ratio in the 332 is 9.5 to 1, 10.2 to 1 in the 352, and 10.5 to 1 in the 361. Advertised horsepower ratings are 265 for the 332, 300 for the 352, and 303 for the 361. These ratings are all at 4600 rpm. Maximum torque ratings are 360 lb.-ft. for the 332, 395 lb.-ft. for the 352, and 400 lb.-ft. for the 361. These ratings are all at 2800 rpm.

The fact that the engines use the same cylinder block makes it only natural for many of their parts to be interchangeable; however, there is little to gain from this interchangeability. Mathematical computations indicate that all the cylinder heads are the same, the difference in the compression ratios of the different engines being due to their displacement. If a fellow had a 332 he could raise its displacement and compression ratio by installing a 352 crankshaft and a set of 352 pistons in it. The pistons would have to be installed with the crankshaft to compensate for the increased stroke length. The 3.7-inch stroke crankshaft used in 430 and 410-inch engines won't fit in the smaller cylinder blocks because of its considerably larger main bearing journals and crankpins.

All the engines are pretty hot in their stock form but their main limitation is their inability to turn high crankshaft speeds efficiently. They have more displacement than was thought possible two or three years ago and the displacement can be raised even higher by boring and stroking. The cylinders of practically any engine can be safely bored up to an eighth of an inch and it is reported that there is adequate room in these engines for a stroke increase of half an inch. To be on the safe side, however, it would be a good idea before pulling the shaft out of the engine and sending it out to be stroked to rotate it in its bearings and check the clearance between the lower ends of the cylinders and the connecting rods in the opposite bank and between the connecting rods and the lobes on the camshaft. The amount of clearance at these points is usually the factor that determines the amount a crank can be stroked and still be used in the cylinder block.

Stroking presents a minor problem in that the skirts of the pistons must be shortened to provide clearancec for the counterweights on the crankshaft. Shortening the skirts reduces the stability of the pistons in the cylinders; however, the only effect this could have on an engine would be to shorten the life of its piston rings. Ring life isn't as important in a converted engine as it would be in a stocker because converted engines are pulled down more frequently than stocken enabling things of this nature to be cared for before they cause trouble.

A stroked crankshaft and oversize pistons-



Stock manifold layout is divided into two "X" shaped passages, with single carb

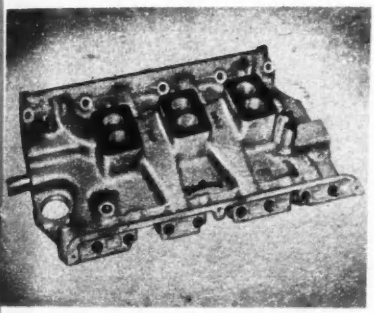
or stock pistons that had been reworked in any manner — would have to be rebalanced before they could be installed in the block. If this weren't done the engine would run rough and chances are it wouldn't be able to attain the crankshaft speeds it should.

Factory specified clearances are .0007 to .0029-inch for main bearings and .0009 to .0028-inch for connecting rod bearings. However, a minimum clearance of .0015-inch and a maximum of .0020-inch should be maintained for both the main and rod bearings in a converted engine. Clearance within these limits will enable the crankshaft to revolve freely but the clearance will not be so great that excessive quantities of oil will pass through the bearings and be thrown onto the cylinder walls. Too much oil on the walls can lead to high oil consumption.

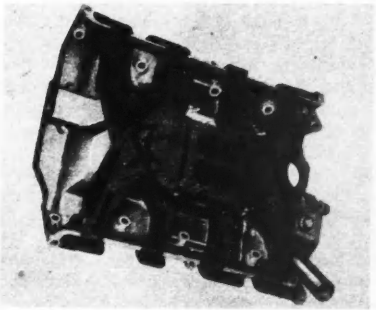
If stock pistons are to be used, the clearance at the top of their skirts should be between .0030 and .0036-inch, which is the factory maximum. An engine with high piston friction cannot turn over freely enough to wind up to high speeds and a clearance within these limits will enable the pistons to move freely in their cylinders. The clearance should not be increased to more than .0036-inch because if it is it is possible that the pistons will be noisy. Special pistons should be fitted to the cylinders with manufacturer's specified clearance.

A compression ratio of 10.5 to 1 is high enough for one of these engines that is to run on service station grades of gasoline. Premium gasoline must, of course, be used. Boring and stroking automatically raise the compression ratio because they increase the displacement of the cylinders while the capacity of the combustion chambers remains the same. It's not impossible that the ratio in a bored and stroked engine might be so high with stock heads that the engine couldn't be run on gasoline. This is something that should be given serious thought before any work is done on the engine because if the ratio is too high after the engine has been assembled, difficulty might be experienced in bringing it down to a usable level. The logical thing to do when boring and stroking is to install pistons with a compression height that will provide the desired ratio. However, care must be taken here because a portion of the piston head must come fairly close to the top of the cylinder to provide the required turbulence in the compression chamber when the fuel and air mixture is compressed. There undoubtedly will be special pistons made for this.

If the engine is not to be bored and stroked, raising the ratio of a 332 (or a 352, for that matter) to a 10.5 to 1 may pose a problem unless pistons with special high-dome heads are installed. The cylinder heads shouldn't be milled to raise the ratio because of the limited clearance between the valve heads of the pistons when the pistons are at top center on their exhaust strokes. With the limited clearance it is possible for the pistons to hit the valves, or vice-versa, if the valves are floated at high engine speeds. If this should happen it would be possible for the engine to



Edelbrock triple manifold just announced is improvement over the stock arrangement.



Stock porting can be better understood by tracing flow paths with this phantom view.

CONTINUED

MORE GO FOR THE '58 FORD

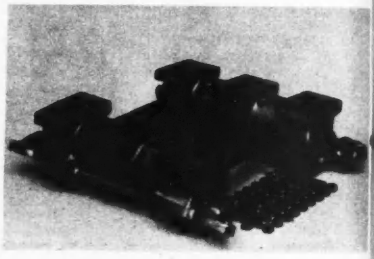
be badly damaged.

Another thing against head milling, and especially on engines such as these where the intake manifold also serves as a tappet chamber cover, is that is throws the intake ports in the cylinder heads out of alignment with the ports in the intake manifold. Slight misalignment at these points can be compensated for by carefully matching the ports in the manifold to those in the heads after the heads have been installed on the block. This should be done in any engine but it becomes ever more necessary in engines with milled heads. If the heads should be milled for any reason, all their valve seats must be recessed at least the amount of the milling so stock clearance will be maintained between the valve heads and the pistons. If the valves are lightened by removing material from the top surface of their heads, the thickness of the material removed can be deducted from the amount the seats must be recessed.

Stock intake valves are large enough for any converted engine but oversize exhausts can be installed when maximum performance is required. Exhaust valves from 430-inch engines are ideal for this purpose as they fit the heads for the smaller engines. Stock valves and the oversize exhausts are quite heavy due to their large heads and stems and they should be lightened by removing material from the top and bottom surfaces of their heads. Rather than leaving the top of the heads flat, material should be removed to give them a dished, or tulip shape. Care must be taken, however, to not remove so much material from the heads that their strength is reduced. The heads should be polished on all their surfaces and all their sharp edges rounded to prevent their becoming overheated when the engine is developing its maximum horsepower.

Intake ports and passages in the heads are large enough for any engine conversion but their surfaces should be smoothed and they should all be ground to the same dimensions. A good method of arriving at uniform dimensions is by grinding the ports to match the openings in an intake manifold gasket. After the ports and passages have been ground it will be necessary to align the intake manifold ports with them. Exhaust ports and passages should be given the same treatment given the intakes and then the openings in the exhaust manifolds should be aligned with the ports in the manifold don't overlap them.

The exhaust system presents a problem in that stock exhaust manifolds don't have the capacity and flow characteristics that will be necessary for a reworked engine capable of turning crankshaft speeds in excess of 6000 rpm. Until headers become readily available it will be necessary to custom build them for engines that will be expected to deliver their maximum potential horsepower. This isn't as simple as it seems, though, because a header that isn't designed correctly may not be any better than a stock manifold and there is a chance that it could be worse. Headers built by such companies as Hedman are thoroughly



Weiand Drag Star is strictly for racing, provides the engine adequate venturi area.

tested for efficiency and proven to be a definite improvement over stock manifolds before they are released to the public. As car for road use must have dual exhaust pipes and if the car is to be run on a drag strip it should be fitted with lakes plugs. For an all-out competition car the exhaust system can be tailored to fit.

The modification that will help one of these engines the most is the installation of a reground camshaft. For engines of most makes cams are reground to open the valves earlier, lift them higher, and close them later than a stock camshaft but cams for these engines are ground primarily to open the valves earlier and close them later because the lift cannot be increased appreciably due to the limited clearancce between the valves and the pistons. The milder cams ground by Iskenderian, for

instance, lift the valves .410-inch, and his cams for competition use lift the valves .420-inch, compared to approximately .400-inch for a stock cam. The grind chosen will depend on the use for which the engine is being built and it will be necessary to talk to the man from whom you are going to buy your cam to see which of his grinds he will recommend for your particular engine.

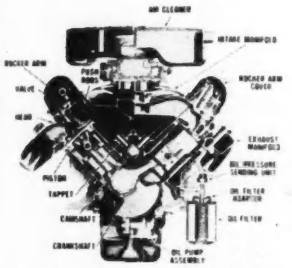
Most of the grinders will recommend chilled-iron valve lifters, which they can supply, for use with their cams. The reason for this is that chilled-iron lifters are more compatible with reground cam lobes than stock steel lifters and they will have a longer life. Hydraulic lifters cannot be used with reground cams because the clearance ramps on the cams are not suitable for them. Special lifters supplied by cam grinders have their push-rod seat on their upper end, which means that stock tubular rods for hydraulic lifters can be used with them. However, the ball bearings welded in the ends of stock rods have been known to break loose from their welds when the rods were subjected to rough usage. Special tubular rods that are made of chrome-moly steel and are fitted with pressed-in inserts in their ends are available from cam grinders for these engines and they should be used.

Stock 1.76 to 1 rocker arms are not recommended for use with reground cams because they tend to cause the valves to float at speeds lower than are possible with special 1.50 to 1 rocker arms. Iskenderian has these special arms and they can be installed without any other modifications — stock rocker arm stands and shafts are used with them. The arms are fitted with self-locking adjusting screws that simplify valve lash adjustments. When a reground camshaft is being ordered it is necessary to state which rocker arms are to be used so the correct grind will be supplied.

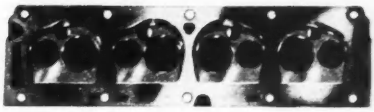
Stock valve springs and spring retainer washers can be used with mild grinds but special dual springs and heat-treated retainer washers must be used with competition grinds. Stock washers have ample strength for any spring setup but their shape doesn't permit their being used with special inner springs. The upper end of the valve guides on '57 engines had to be machined to a smaller diameter when inner springs were used but this isn't necessary on '58 heads.

It is important that the springs be installed to their correct length when the valves are on their seats so they will exert the specified tension on the valve stems. This is important in any engine but especially so when valve seats have been recessed into the heads to provide more clearance between the valve heads and the pistons. Recessing the seats increases the distance between the valve spring washers and the surface of the head on which the springs seat. The springs can be shortened to the specified dimension by placing special washers between their lower ends and the head.

Ford doesn't have any special intake manifold for three two-throat carburetors is available from Edelbrock Equipment Company in Los Angeles, California. This manifold can be ordered for carburetors with either three or four-bolt flanges. The three-bolt carburetors Edelbrock recommends are made by Holley as original equipment for earlier Ford engines and they have 1 1/16-inch venturis. The four-

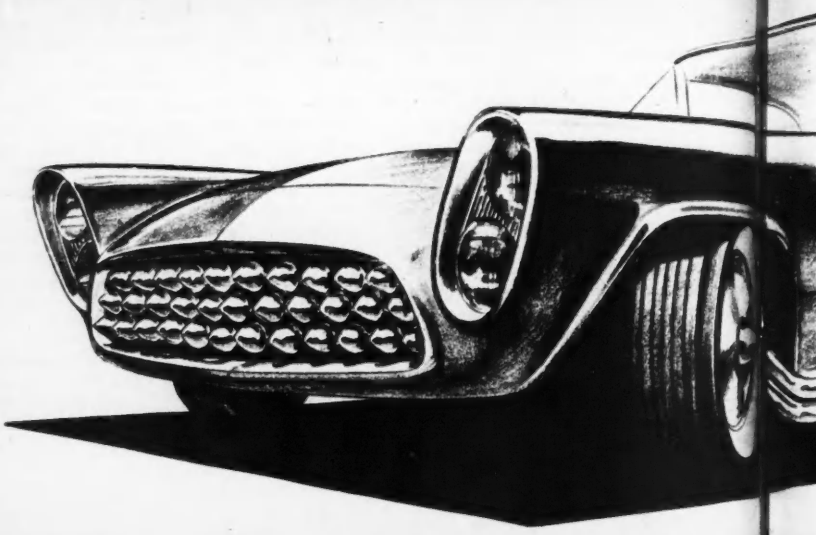


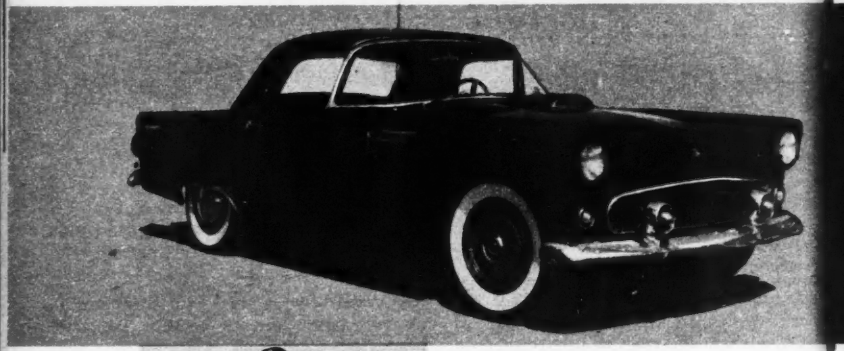
Cross-section reveals large port areas, compact short-stroke design of the new mill.



2" intakes and 1 9/16" exhausts are located so exhausts are not next to each other.

continued on page 62



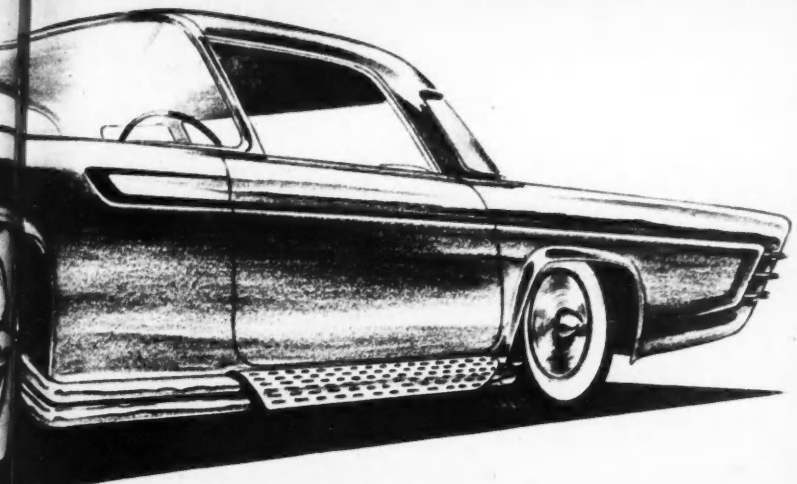


Gene Winfield

THIS MONTH'S restyle feature involve two of the most heartening things yet happen to customizing; first, the advent o the Ford Thunderbird, and second the col laboration of the custom metalsmith with a automotive stylist.

The Thunderbird we're all familiar with – it's safe to say that custom enthusiasts accepte this car with open arms, as the first umpteen pages of this month's CAR CRAFT graphically demonstrate.

The collaboration of the custom metal smith, or bodyman, with an automotive stylis



Illustrations by Dick Collier

WINFIELD'S CUSTOM SHOP

RESTYLES

The '55 Ford Thunderbird

holds more promise than anything to date for the continued progress of the customizing hobby. Although many customizers are not only good metalworkers, but also excellent "idea men," they are still, unfortunately, in the minority. Many a custom featured within the pages of this magazine has been included more on the basis of the quality of workmanship exhibited than for the overall effect of the final design — some, indeed, fall far short of being pleasing to the eye, but are shown to give the reader an idea of just how novel a car may become when "put to the torch."

Gene Winfield, well-known Modesto, California custom shop proprietor, teamed-up with Bart Bartoni, a Northern California automotive stylist of no small repute himself. Together, with Winfield tempering Bartoni's ideas with the practical experience born of many years of metalworking, they have evolved a startling facelift for the 'Bird which has an overall design concept that should be found more than just pleasing to the majority of enthusiasts. While some of you might have handled a few of the detail touches differently

CONTINUED

were it your own project, that very difference of opinion is the heart of the hobby.

BODY MODIFICATIONS

Without altering in any way the basic silhouette of the 'Bird, Winfield has succeeded in drastically transforming its appearance when viewed from the side or rear by performing a clever and inexpensive modification to the top. The stock rear window was removed and replaced with plexiglas paneling extending around to the sides. Since the top is made of fiberglass, it wouldn't even be necessary to light a torch to perform this neat trick.

Other than the top change, Body Modifications were confined to the usual emblem-removing operations with one notable exception. The rear wheel openings were flared in a manner similar to the front, a change that could do much for any Thunderbird.

HOOD, GRILLE, FRONT FENDER AND HEADLIGHT MODIFICATIONS

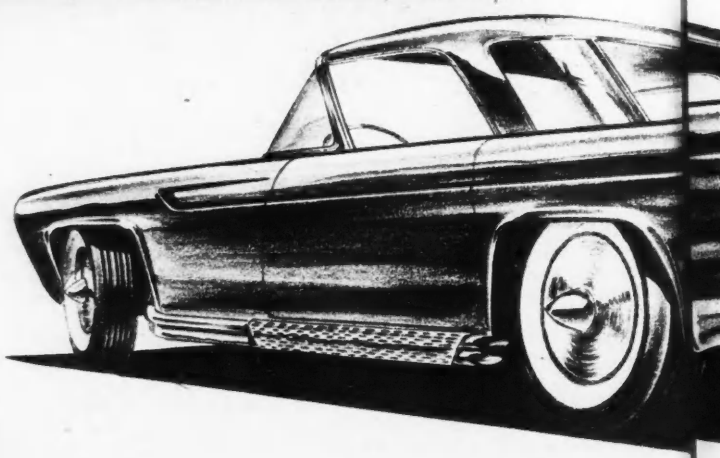
Removal of the stock air scoop from the hood was the opening move in the front-end campaign. Front fenders were then cut loose, then rewelded to the body after a pie-shaped section was removed to cause them to cant inwards at their lower edges. The front gravel pan from a '53-'54 Studebaker was then worked into the lower front fender extremeties, providing an oval-shaped grille cavity reminiscent of current Italian designs. Although the type of grille suggested to us by this shape opening is the classic Ferrari "egg crate," Bartoni decided to strike off into the unknown and build up grille out of accessory "bullets."

Quad headlights were installed in housings formed into the front fenders that have the same degree of inward cant as the fenders.

REAR FENDER, TAILLIGHT AND DECK MODIFICATIONS

Extending the rear fenders beyond the point where the taillights ordinarily mount provided a natural quad taillight installation opportunity. The contour of the fender tips themselves divides the lights, while three chrome tubes on each side curve from the outside light, around the fender tip, back into the inner light recess. As a source of illumination, the

RESTYLING THE '55 Ford Thunderbird



stock Ford taillights were retained, but now completely concealed except from the direct rear.

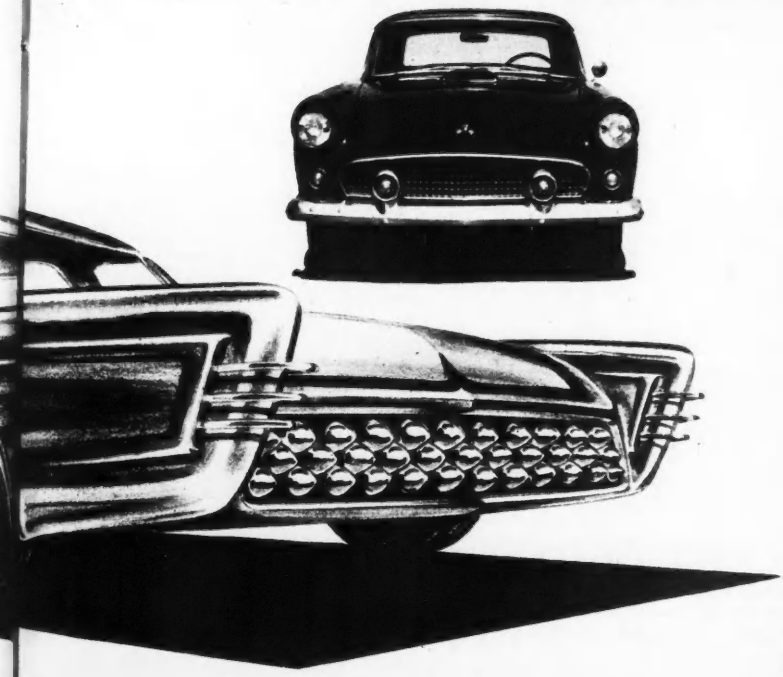
The recess between the rear fenders just below the deck opening was converted into a rear grille opening by installing a second Studebaker gravel pan between the rear fenders at this point. Once again the choice of grilles is wide open, Bartoni sticking to his guns and going the bullet route on the example shown.

Winfield says that he and Bartoni agree their version of the 'Bird would look best if finished in one solid color – a point of view that is frequently taken when the contours of the car in question are something to be proud of, not to be concealed. Light scalloping accent of certain specific design features was recommended by this team, with the suggestion that it be done in a darker shade of the same basic color.

When the Winfield-Bartoni 'Bird is compared to the stock product, it's easily seen that they chose to make the modifications that would result in the greatest change possible, without exceeding the mythical budget of $1,000 CAR CRAFT imposes upon its restylers.

PARTS AND PRICE LIST

	Labor	Parts
Remove rear bumper from hood	$5.00	
Fiberglass valance panel	35.00	
Install rear fenders and center tail-light panel with reverse scoops	200.00	
Body lower finishing, hood and miscellaneous installations	200.00	
Make up and install trim	15.00	
Install rear window as top	30.00	
Make Studebaker bumper panel to [illegible]		
Install grille opening	45.00	14.00
Install custom grille	30.00	
Remove rear bumper guns and install [illegible]		
Bullet to nose to match rear	40.00	14.00
Regular assembly and sealing	90.00	
	990.00	28.00
	30.00	
TOTAL	$[illegible]	



CANADIAN CAPER

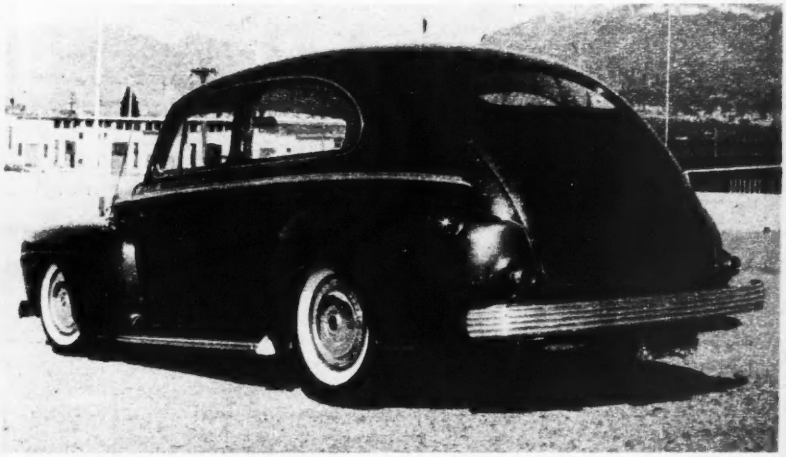
Rocket powered custom coach from British Columbia

'58 Edsel quad headlights combined with '57 Vauxhall grille and park lights lend all-out disguise up front. Bumper is '37 DeSoto.

Stark taillight styling emanates from '56 Dodge. DeSoto bumper is also featured at rear. Don is member of West Point Customs.

A powerful '51 Oldsmobile engine furnishes motivation for Don Campbell's beautifully updated '47 Merc tudor. Built by Don, the coach features some of the latest customizing concepts for the not-forgotten early models. Mechanics also feature hydro trans.

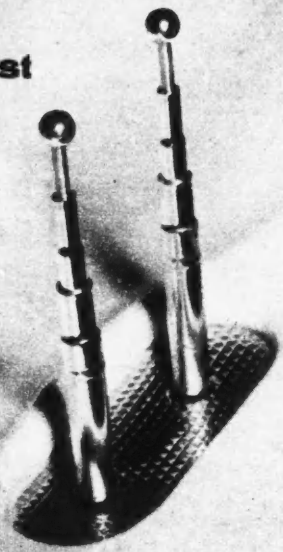
Photos by Bud Lang



Maroon beauty is lowered with dropped axle up front and raised rear crossmember. Exterior exhaust headers and v-butted windshield are portions of Merc's custom attire. Standard trim removal of hood and deck is present. Door handles were given "deep six."

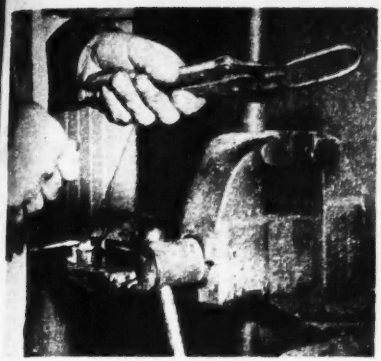
QUAD ANTENNAS

customizing's latest trick with accessories



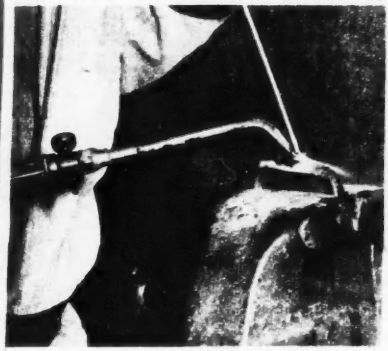
By Bob Hardee

IN SCOUTING custom auto shows a reporter is often treated to the "latest" in customizing ideas. One of a unique and timely theme was this reporter's fortune at the recently held San Diego Autorama. "Quad radio antennas," created by Toigo's Custom Shop of the same area, flavored the fender of one displayed custom car which proved a popular conversation piece for other car owners and spectators alike. This latest in antenna innovations consists simply of adapting two stock accessory antennas bordered by a frenched opening as seen above. Destined to be adopted by the nation's alert customizers, Toigo cooperatively performed a similar installation for our cameras and for readers of CAR CRAFT magazine. The project, a simple one, is another styling "first" by the country's prolific custom car builders.

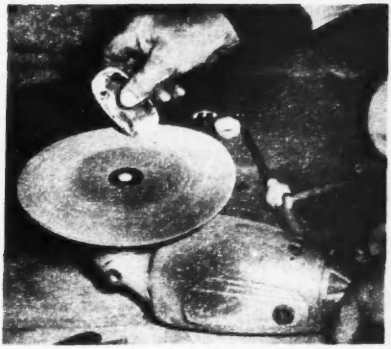


1. First step consists of forming link from 5/16" round rod the size of fender opening.

2. Link's seam is brazed closed, then link is traced off on to flat sheet metal stock.



3. Tracing is cut from sheet metal, then placed on link and solidly brazed as shown.



4. Using an electric grinder, border welds of link are ground smooth and finished off.

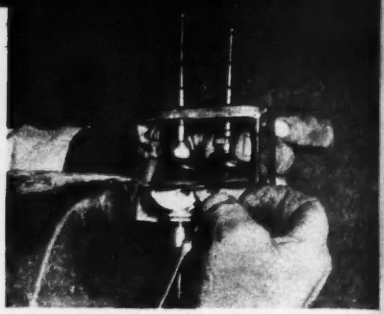
5. Another small strap is cut from sheet metal; formed in shape of a squared "U".

6. Two small notches are cut into the bottom of the bracket with tin snips as shown.

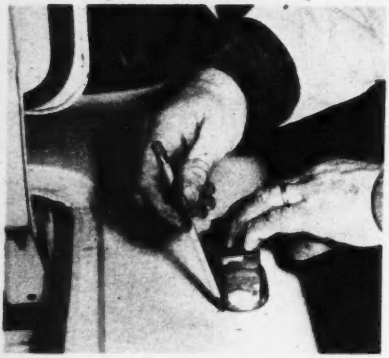
CONTINUED

QUAD ANTENNAS

7. Two small holes slightly larger than antennas' poles are drilled in top of link.

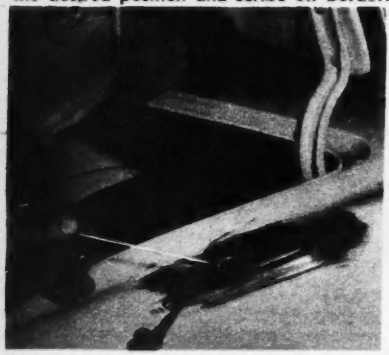


8. Weld "U" shaped bracket to link. Mount antennas and check alignment as shown.

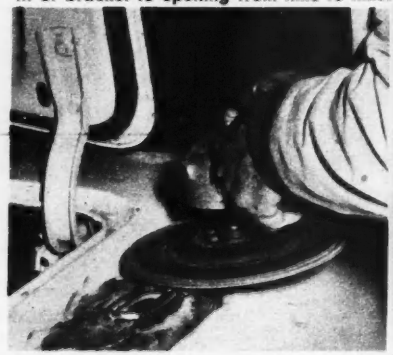


9. Place bracket assembly onto fender in the desired position and scribe off border.

10. Cut scribed opening in fender. Check fit of bracket to opening from time to time.



11. With bracket correctly aligned, braze bracket solidly to fender around border.



12. Brazed areas are now ground smooth, then thoroughly cleaned with rotary brush.

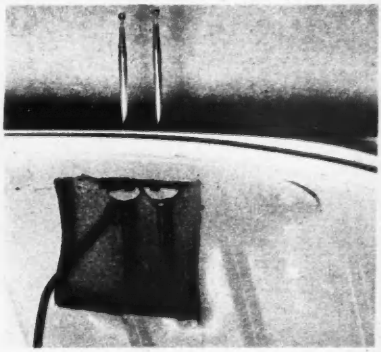
13. Tin area, then apply stick lead with soft torch heat, contouring with a paddle.

14. Fender's working area is now brought to perfection by filing lead with vixen file.

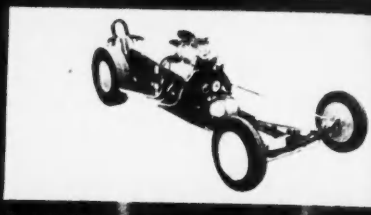
15. Surface is now sanded. Swab well with wax and grease remover, then metal prep.

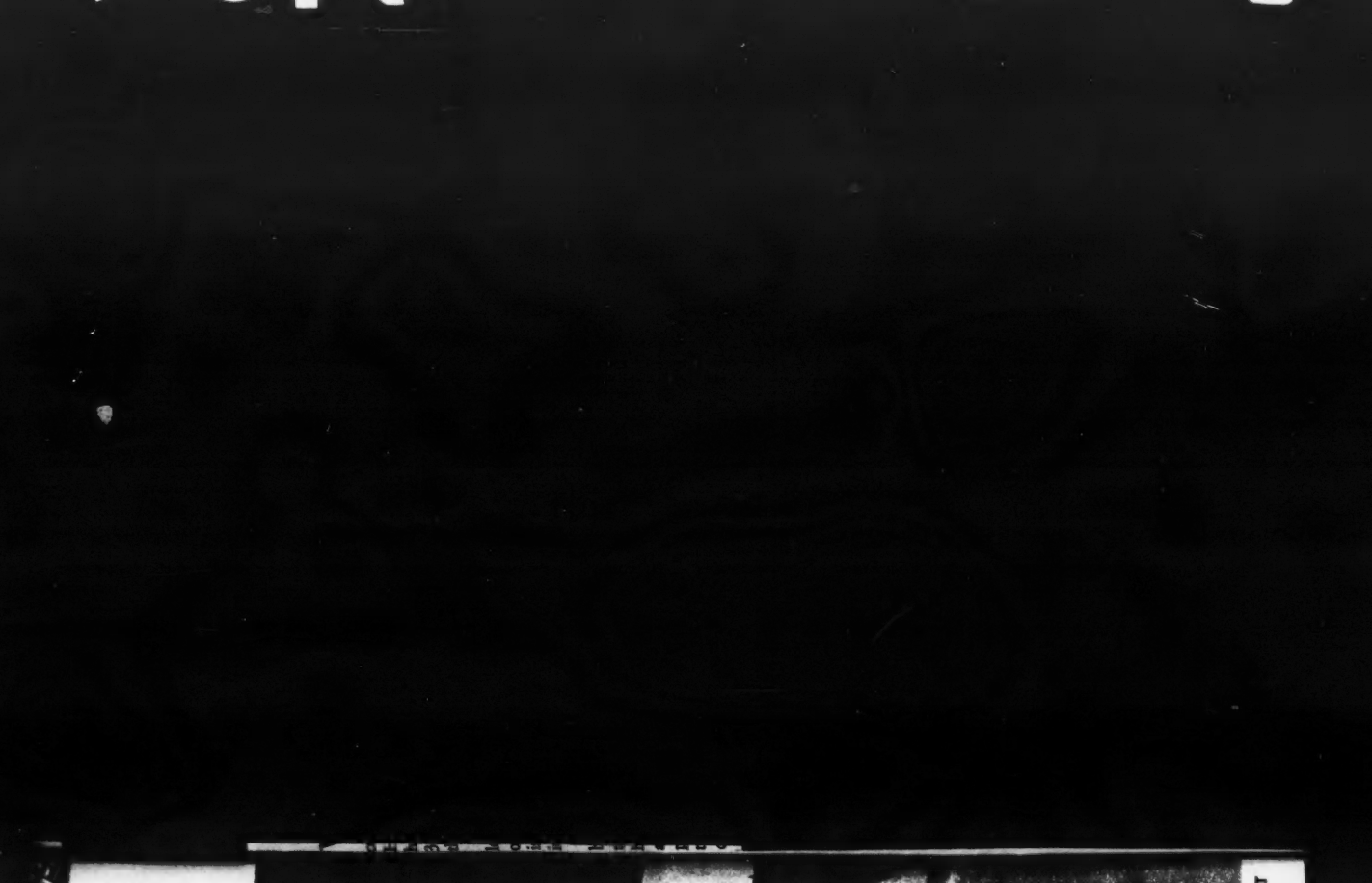
16. Several coats of primer are applied; surface is blocksanded. Finish paint next.

17. Antenna opening is neatly trimmed off with a piece of chromed perforated metal.



18. Antenna must be well insulated (see antenna direction sheet). Only one is used.





ENGINE ANALYSIS

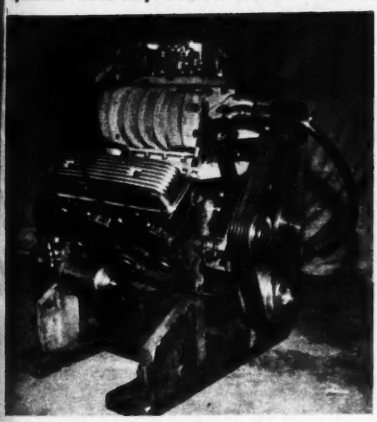
Dick Harryman's BLOWN OLDS

Text and Photos by Don Francisco

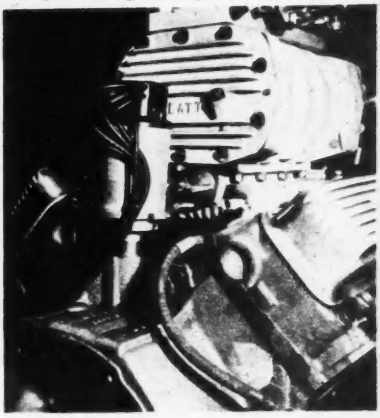
WHEN MICKEY BROWN feathers the Harryman, Frank and Brown dragster off the starting line his throttle foot is tickling the ribs of 500 extremely healthy horses concentrated in the confines of a 406 cubic-inch blown '57 Oldsmobile engine built by Dick Harryman. On Stu Hilborn's dynamometer, running on gasoline, the engine developed 500 hp at 5200 rpm. At 4200 rpm the hp was 430. Maximum torque output was 500 lb.-ft. at 3500 rpm. These outputs were with 14 pounds boost in the intake manifold. In the dragster the engine turns approximately 6300 rpm at the end of the quarter.

Engine performance such as this isn't easy to come by, even with a blower. It requires a lot of careful planning and equally careful workmanship, along with a happy coordination of engine components. The performance of this engine and the fact that it is still together is proof that Dick has met these requirements and, furthermore, that he knows how to tune it to get the most out of it.

Of he many do's and don'ts of the hot rod trade, one of the more important don'ts is don't bore the cylinders of any block more than ⅛-inch if the cylinder walls are to be expected to stand up under high combustion pressures. Dick knew this as well as the next guy but he had his block bored 3/16-inch to give its cylinders a diameter of 4 3/16-inches. Then he installed a set of racing pistons made by one of the better known piston manufacturers, and the piston pins recommended for the pistons, in the cylinders. The first time the engine ran, several of the pistons cracked because the pins were flexing. But despite the trouble with the pistons, the cylinder walls stayed in the block and to this date they haven't given any trouble.



Powerplant of the Harryman, Frank and Brown dragster (inset photo, opposite page) is 406 cubic inch '57 Oldsmobile developing 500 horsepower running gas.



Kit to adapt GMC 4-71 diesel engine scavenging blower to Olds is made up by Tom Beatty of Glendale, California. Vertex mag gives positive ignition at high RPM.

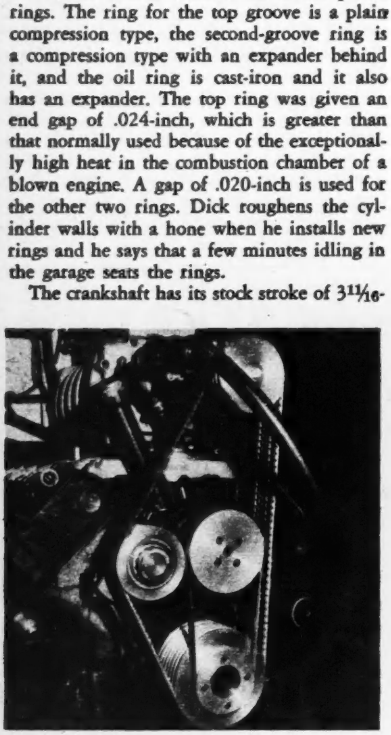
CONTINUED

Dick took his piston troubles to the Merryman Piston Company and they suggested a set of super heavy-duty beefed-up slugs that have heads 5/16-inch thick and reinforcing ribs inside their skirts. Dick installed the pistons and some extra-heavy pins and this combination was in the engine when it made its first record breaking run at 152mph. The pistons are fitted to the cylinders with .013-inch clearance at the top of the skirts.

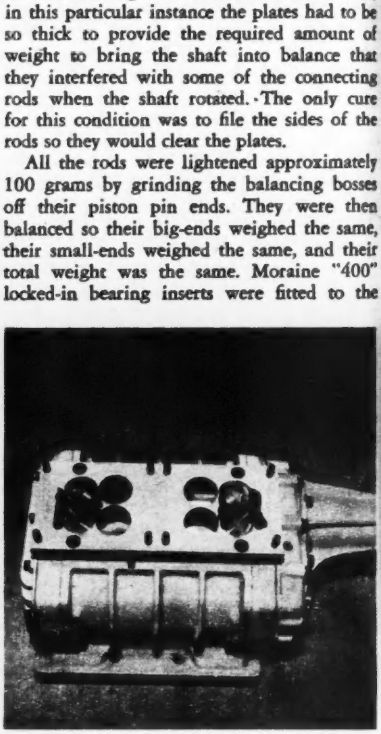
Dick is a firm believer in Grant piston rings. The ring for the top groove is a plain compression type, the second-groove ring is a compression type with an expander behind it, and the oil ring is cast-iron and it also has an expander. The top ring was given an end gap of .024-inch, which is greater than that normally used because of the exceptionally high heat in the combustion chamber of a blown engine. A gap of .020-inch is used for the other two rings. Dick roughens the cylinder walls with a hone when he installs new rings and he says that a few minutes idling in the garage seats the rings.

The crankshaft has its stock stroke of 3 11/16-inches and its main bearing journals and crankpins are standard diameter. The only special work done on the shaft was to rebalance it for the connecting rod and piston weight. This was done by Jim Khougas at C. T. Automotive and it presented special problems because shafts in '57 Olds engines are designed to be balanced as a unit with their flywheel and vibration damper. So that the shaft could be used with individually balanced flywheels and dampers, it was necessary to weld steel plates to its end counterweights. This didn't present any particular problems because it's common practice to weld plates to the counterweights of shafts that have been stroked to bring them into balance. However, in this particular instance the plates had to be so thick to provide the required amount of weight to bring the shaft into balance that they interfered with some of the connecting rods when the shaft rotated. The only cure for this condition was to file the sides of the rods so they would clear the plates.

All the rods were lightened approximately 100 grams by grinding the balancing bosses off their piston pin ends. They were then balanced so their big-ends weighed the same, their small-ends weighed the same, and their total weight was the same. Moraine "400" locked-in bearing inserts were fitted to the



Pulleys for blower are machined out of solid aluminum; are connected by six V-belts. Idler assembly (pulley at left center) is adjusted manually to correct belt tension.



Inch-thick adaptor plate is fastened to top of blower by Allen bolts; mounts two '58 Pontiac Carter four-throat carburetors. Requirements for plate are explained in text.

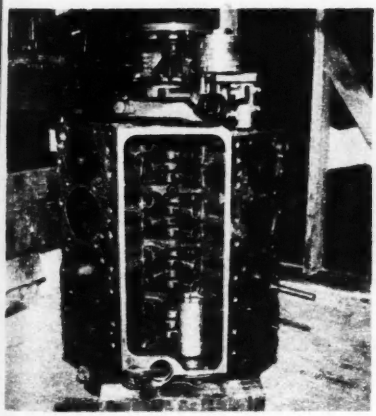
rods. These bearings have a special aluminum alloy bearing surface on a steel backing and they haven't given a bit of trouble. Dick uses the original full-flow oil filter, which provides a definite advantage as far as bearing life is concerned because the bearings receive only clean oil. At the present time Dick is using an SAE 30 oil with detergent additives that is refined and blended by Richfield Oil.

Cylinder heads on the engine are '57's that provided a compression ration of 9.5 to 1 on a stock cylinder block. With the greater displacement of the bored cylinders the compression ratio is now 10.5 to 1. Intake and exhaust ports in the heads were partially reworked by C. T. Automotive and partially by Dick. Intake ports and passages were enlarged to the dimensions of the ports in a stock intake manifold gasket and approximately a quarter of an inch of material was ground from the pushrod bosses in the passages to reduce the restriction caused by the bosses. End exhaust ports were enlarged to 1⅜-inch high by 1½-inch wide and the middle exhaust ports were enlarged to 1⅜-inch by 2⅜-inch wide. All surfaces of the combustion chambers were polished.

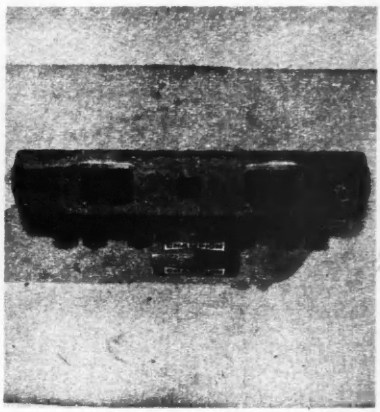
Special intake valves with 1 15/16-inch diameter heads were fitted to the cylinder heads. These valves were originally for a Chevrolet six Powerglide engine and the heads were thinned to reduce their weight and their stems were shortened and new lock grooves cut in them. The original 30 degree face angle was left on the valves. Stock 1⅜-inch diameter exhaust valves were used and the only modification made to them was to remove material from their heads to lighten them. The stock angle of 45 degrees was retained. Intake valve ports in the heads were enlarged to match the inner diameter of their new 30 degree seats and excess material was ground out of the exhaust valve ports so full advantage could be taken of the valve area.

Dual valve springs from an Engle Racing Cams kit hold the valves on their seats with a tension of 150 pounds. The outer springs are similar in size to late Olds springs and they have the flat steel Olds damper in them; however, they are considerably stiffer than Olds springs. Inner springs are '57 Buick. Stock split locks are used with Iskenderian hardened-steel retainer washers.

Stock '57 rocker arms with a ratio of 1.8 to 1 open the valves. As these rocker arms are designed for use with hydraulic lifters, they don't have any means for adjusting valve lash. This was provided by a set of Smith Brothers Manufacturing Company pushrods that have an adjusting screw in their end.



Block has been bored out 3/16" oversize to bring cylinder size up to 4 3/16", providing 406 cubic inches without stroking. Cam is an Engle #95 grind on a steel billet.



Intake ports were matched to stock gasket dimensions; lightly polished. Big boost in area was gained by grinding ¼" of metal off protrusions in ports around pushrods.

CONTINUED

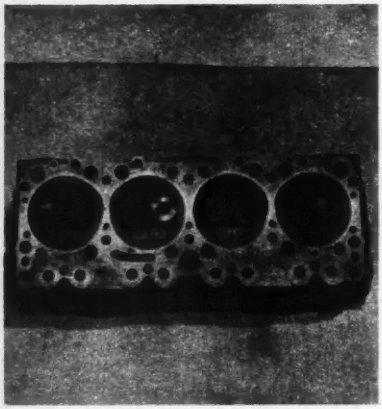
The lower ends of the rods seat in Potvin chilled-iron valve lifters.

The camshaft is an Engle No. 95 Blower Special grind on a steel billet. This same grind is available on stock camshafts but stock shafts are not capable of carrying the high valve spring loads that can be used with the billet. The cam opens the intake valves 24 degrees before top center, closes them 62 degrees after bottom center, opens the exhaust valves 64 degrees before bottom center, and closes them 22 degrees after top center. Lift for both intake and exhaust valves is .425-inch. A stock chain and sprocket assembly drives the camshaft.

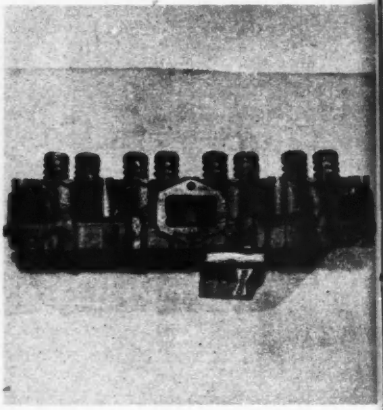
Stock steel-asbestos head gaskets are used and they blew frequently until Dick learned how to modify them to help them hold the high combustion pressures in the cylinders. The modification consists of making a ring of .032-inch diameter copper wire to fit into the groove around the cylinder openings in the gaskets. This groove is the one that results when one of the gaskets' steel sides is crimped over the other. Soldering the ring to the gasket at five or six points around the ope ing holds it in place. When the gaskets a installed they are placed on the block so the side with the wire ring is next to the block surface. Then, when the cylinder heads a installed on the gaskets and their bolts a torqued to the current tension, a high un pressure is created between the rings and th block and between the top surface of th gasket that is over the rings and the surface o the cylinder head. These points of high pre sure prevent the gaskets from blowing. Do Clark, of C. T. Automotive, is the fello who told Dick to modify the gaskets in thi manner. This is an idea that would be applic able to steel-asbestos or copper-asbestos ga kets for any make of engine.

The engine's ignition system is a Scintill Vertex magneto. So far the mag has done good job of firing the high compression pre sures in the cylinders at all engine speed Governor weights in the magneto provide 2 crankshaft degrees of advance and Dick give the mag 10 initial degrees for a total of 3 degrees. Spark plug cables are Packard 44 and they are fitted with Rajah solderless clip on their plug ends.

Dick uses Lodge R-49 spark plugs in th engine and he says the same plugs hav been used for 12 dynamometer checks, 2



Stock exhaust valves were lightened by thinning heads. Intakes are Chevrolet Powerglide 6 with thinned heads. Stems were shortened to provide correct spring length.



Olds and Cad engines are criticized for siamesed center exhaust port, but installation of dual headers on this port produced no additional power. Ports are enlarged.

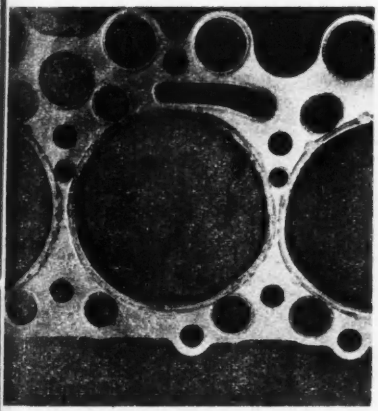
drag runs in a coupe that turned a top speed of 116 miles per hour in the quarter-mile, and 30 runs in the dragster. This is phenomenal performance from spark plugs of any make. These, incidentally, are not Lodge's best plugs, which have platinum contacts. For warm up Dick uses Lodge 3HAN14 plugs. These are hotter than the R-49's.

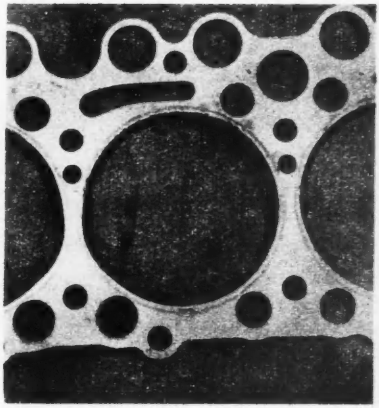
The engine's most impressive features is its big 4-71 GMC blower and drive assembly. A Tom Beatty adapter kit was used to install the blower on the engine. Included in the kit was a special rear plate for the blower, a special front plate with a driveshaft and pulley assembly, a crankshaft pulley, an idler for tightening the belts, a water pump pulley, and an intake manifold. All the pulleys in the blower and water pump drive were machined from solid aluminum stock and the intake manifold and other parts are aluminum castings. The impellers in the blower are rotated at 1⅓ times engine speed by six ⅜-inch wide 45 degree V belts. The idler assembly, which is tightened manually and locked in place, holds the belts at the correct tension. A single V belt rotates the water pump at approximately .8 crankshaft speed.

Ball bearings that support the rear ends of the blower's rotors are lubricated by oil in a sump formed by the special rear cover plate. A filler plug is provided in the plate for adding oil to the sump. Bearings and impeller drive gears at the front of the blower receive oil from the engine's lubrication system through an oil line tapped into the outlet side of the oil filter. A restricted fitting with a .020-inch orfice is used at each end of the oil line to limit the quantity of oil that can enter the gear housing. Another line connected to the housing allows excess oil to flow back to the engine's crankcase. In this way oil is permitted to circulate through the housing and the correct level is maintained.

A spring-loaded pop-off valve at the rear of the manifold is adjusted to open when there is a positive pressure of 26 pounds per square inch in the intake manifold. The purpose of the valve is to provide an escape route for the high pressures that are created in the manifold when one of the cylinders backfires. Without such a valve the only way the pressure could get out of the induction system would be through the blower and carburetors and with a positive displacement blower of the GMC type it is more than likely that its impellers, or case, would be damaged by the pressure. In any event the blowers cost too much to make it wise to take a chance.

Ample carburetion is provided by two Carter four-throat carburetors made original-





Combination of 10.5 to 1 compression ratio and over 15 pounds boost from blower make head gasket reliability doubtful. Gaskets were modified by soldering rings . . . . . of .032" diameter copper wire onto crimped side, which is placed down toward block when installed. Heads form raised ring on gasket (see above) when torqued.

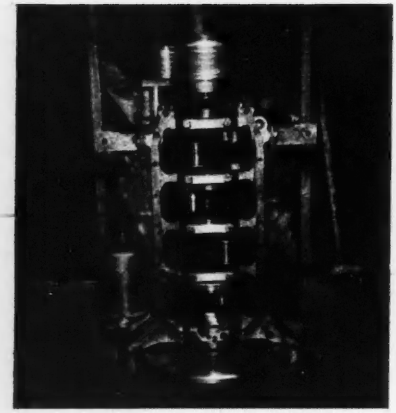
CONTINUED

ly for '58 Pontiac engines. These carburetors are big brutes internally with 1 5/16-inch primary venturis and 1 3/8-inch secondary venturis. Total venturi area provided by both carburetors is 12.72 square inches, which is more area than there would be with eight Stromberg 97's. The carburetors are stock with the exception of alterations made to their main metering jets and metering rods to richen the air fuel ratio of the mixture they deliver to the blower. The air-velocity controlled valves in the carburetors' secondary throats were left in the carburetors so the engine would have better throttle response at low engine speeds. When engine speed inincreases to the point where sufficient air to fill the cylinders can't flow through the primary throats, the difference in the pressures above and below these valves opens them so air can also flow through the secondaries.

An adapter plate had to be made before the carburetors could be bolted to the blower. The plate was made by Jack Engle from a piece of inch-thick aluminum. Holes were drilled in the plate so it could be attached to the blower's outlet flange and its upper side was fitted with studs for the carburetors. Eight holes were then machined in the plate in line with the throats in the carburetors. Because of the uneven spacing of the throats in the base of the carburetors it was found advantageous to install one carburetor in its normal position and to reverse the other one so the distance between the end holes in the plate would be reduced to the minimum. But even with this arrangement the holes in each end of the plate overlapped the opening in the blower, making it necessary to machine them on an angle so the air from two throats of each carburetor could flow into the blower.

Reversing one of the carburetors didn't make any difference in the way the engine ran but it did make it necessary to alter its throttle lever so the same throttle control rod would open the throttle valves in both carburetors at the same time. However, this was a minor detail.

Engine torque is transmitted to the transmission by a Quincy Automotive double-disc clutch and steel flywheel. Double-disc clutches are becoming more and more popular for all-out competition machines because of their



Stock crankshaft stroke of 3 11/16" was retained. Steel plates welded to end counter-weights were required by balancing procedure different from that used by Olds.

Con rods were lightened 100 grams each when balancing bosses were machined off upper ends. Stock GM Moraine "400" bearings have given trouble-free service.

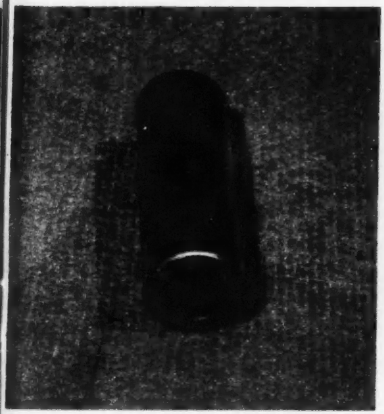
greater torque capacity in comparison to that of conventional single-plate clutches. The assembly on Dick's engine consists of a specially machined steel flywheel that is fitted with an aluminum plate that floats on spacers mounted between the pressure plate housing and the flywheel. The spacers are held in place by the pressure plate housing bolts. On each side of the floating plate is a heavy-duty clutch disc. When the clutch is engaged, its pressure on one of the discs, which in turn is forced against the floating plate, and then the plate forces the other disc against the flywheel. Doubling the clutch's friction area by using two clutch discs in this manner is the feature of the clutch that enables it to transmit more torque than single-plate types.

A 1939 LaSalle side-shift transmission is used in the dragster. However, the transmission is locked in high gear so that no shifting is necessary. Starting a car of this type in high gear is rough on its clutch but it eliminates any delay in its rate of acceleration that might result from shifting gears. The dragster's rear axle ratio is 3.27 to 1.

After the 152 mph run at San Fernando, Dick hopped-up the blower by reducing the diameter of its drive pulley to 4 inches. This increased the speed of the blower's impellers from the original 1⅓ to just over 1½ times crankshaft speed.

It was on the second Sunday after the car's record-breaking run that it ran again at San Fernando. With the new blower drive pulley, the car's driver reported a manifold boost of approximately 20 pounds (the gauge is a little hard to read at 150 mph) and the car's speed was an asphalt-ripping 157.61 mph. On the second run the engine soured halfway to the finish line and the driver got off the throttle and coasted through the trap at 149 mph. An inspection of the engine revealed that the heads of four of its pistons had caved-in. Failure of the pistons was, no doubt, attributable to severe detonation resulting from high compression pressures in the cylinders. An initial compresion ratio of 10.5 to 1 and a 20 pound manifold boost isn't an ideal setup for a gasoline burning engine.

Dick is replacing all the engine's pistons with a new set made by Merryman of a different alloy that it is hoped will take the boost and detonation without failing. A factor that will help the pistons do their job is their low-crown design that will lower the compression ratio to about 8.75 to 1.



Extra-heavy wall piston pins are used to prevent flexing under the fantastic combustion pressures produced within this engine. Pin flex is often cause of piston failure.

Merryman pistons for blown engines have extra thick crowns; 5/16" in this engine. Rings are Grant, set up with extra large end-gaps to allow for heat expansion.

top rodders ready their go-iron as th

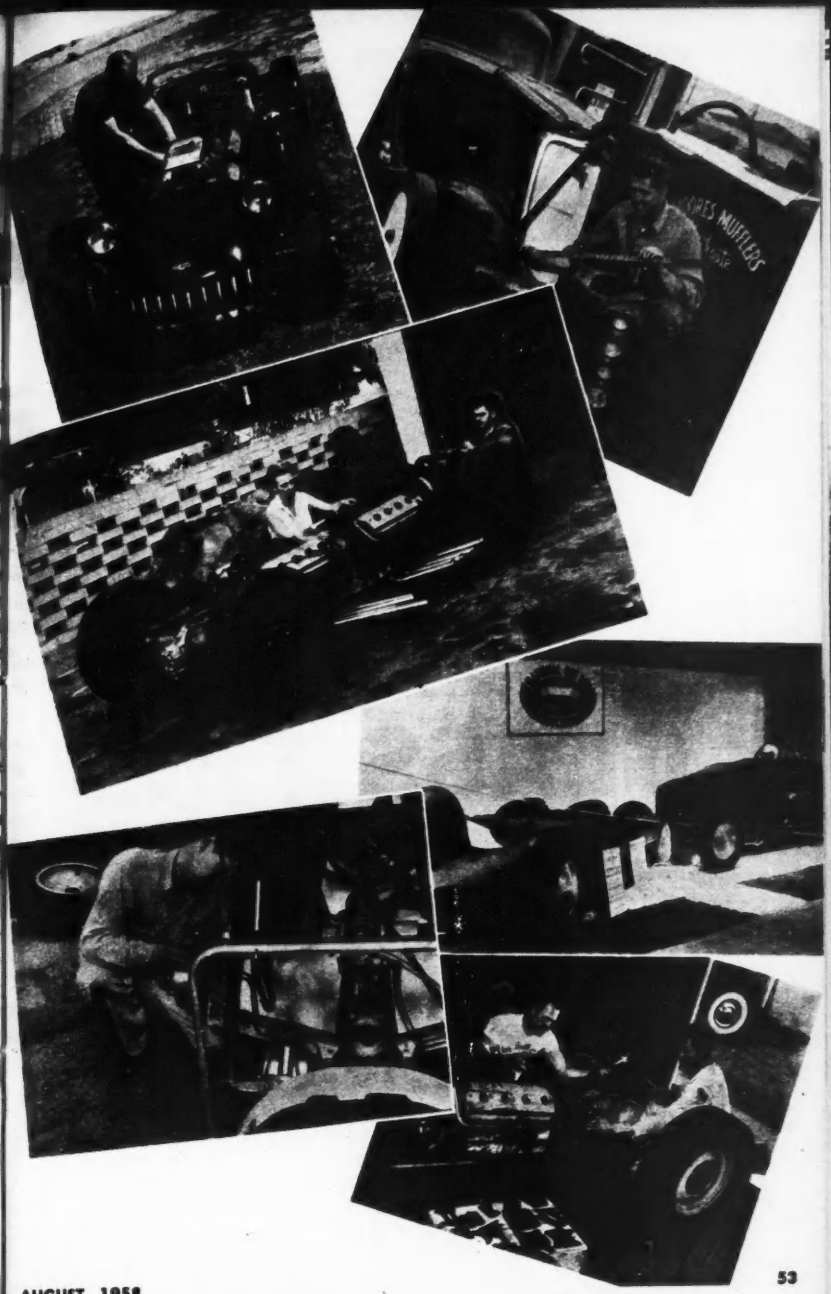
NATIONALS NEAR

CALIBER OF THE cars being readied for the upcomi 4th Annual National Championship Drags is so hi that there's no doubt in anyone's mind that this ev will continue its unbroken record of being bigger a better each succeeding year. Sponsored by National H Rod Association, world's largest and most experienc amateur automotive competition organization, the "ga line-only" event will have as local hosts the Oklahom City Jr. Chamber of Commerce and the Oklahoma Ci Timing Association. Site of the four-day speed-fest wi once again be the Oklahoma State Fairgrounds, when 40,000 spectators witnessed last year's action-packed even as 465 cars jousted for top honors.

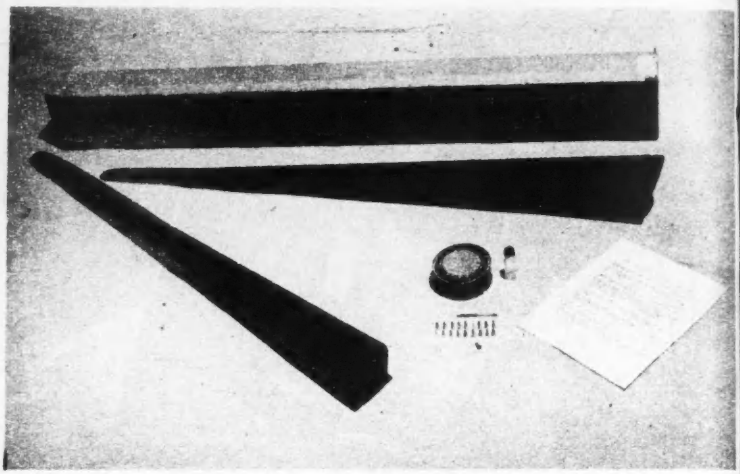
The '58 meet promises to hold even more excitement with the entry list of red-hot machines looming so larg that all thought of running any Stock Car Class compe tition has been abandoned. Twenty classes for hot rod and five for sports cars are slated, with entries received to date indicating there'll be supercharged and multi-engined cars aplenty.

Awards for the ultimate winners are to be more at tractive than ever, with the three-foot high class elimi nator trophies as pictured here being only the starters – class top time awards as well as valuable merchandise prizes will supplement the honors, with a special surprise in store for the overall National Champion.

August 29, 30, 31 and September 1st, Labor Day, are the dates for the premier event – you may reserve *your* accommodations now by contacting the Oklahoma City Jr. Chamber of Commerce, and if it's competition you're craving, NHRA Headquarters at 1171 N. Vermont Ave., Los Angeles 29, Calif., will be glad to send you your Official Entry Form – see you there!


MUFFLERS

ACCESSORY OF THE MONTH



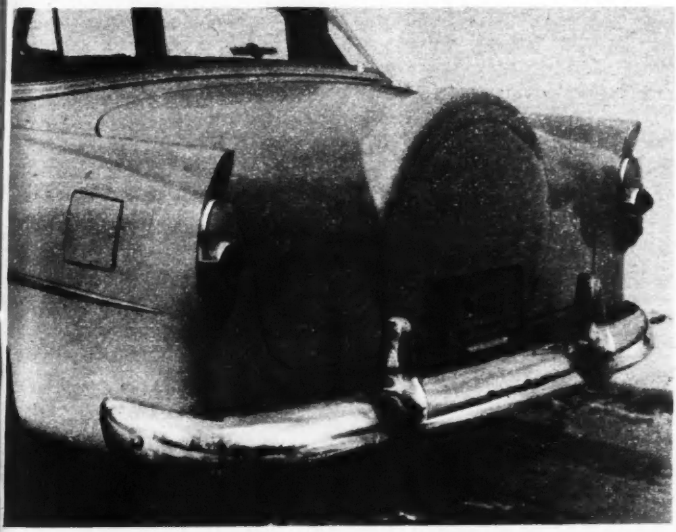
Kits come complete with everything needed to perform restyle. They include fiberglas parts, resin hardener, self tapping metal screws and complete instructions for installatio

GLASS FINS AND TIRE KITS

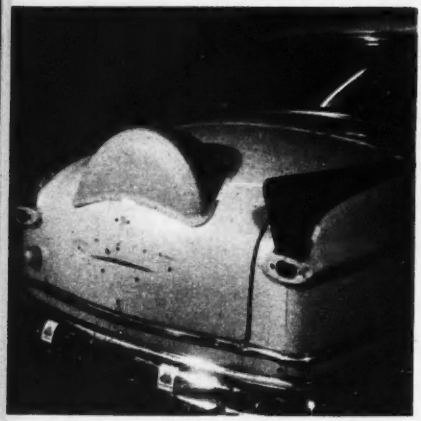
RAPIDLY GROWING in popularity is the fiberglass method of restyling. This is especially so with the do-it-yourself customizer as this method requires no torch or metal work. It is merely a bonding of ready made fiberglass parts to the car. Brandon Automotive Industries has made available for the first time, fiberglass tail fins and continental kits. The tail fins are available for '49-'54 Fords and '55-'56 Chevrolets. The continental kits for '49-'54 Fords. However, with a little ingenuity they can be adapted to many other models, as shown in the photo at right. For full information, prices, or to order direct, write: Brandon Automotive Industries, 1517-cc New York Ave., Lansing, Michigan.

The deep-type fins designed for the '49-'51 Fords are shown in this neat installation on a '51 Ford. The smaller, falsie-type continental kit is used here. It goes for about $14.95.

This '53 Chevrolet sports the tail fins and full size continental kit designed for the '52-'54 Fords. The tail fins are $24.95 as is the continental kit. Many adaptations are possible.



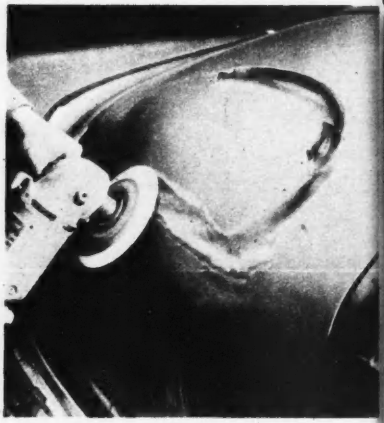
CONTINUED



1. Remove all trim from working area—then tape continental kit and fins into position.

2. With components still in position scribe a mark around each one with a sharp tool.

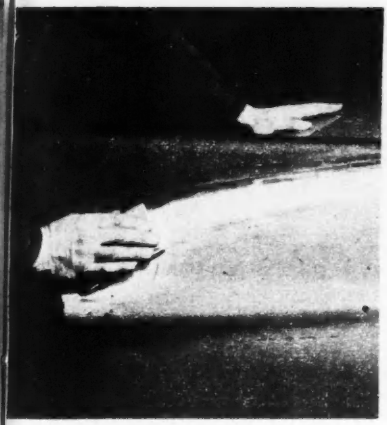
3. Next drill holes through flange into the body. Secure parts with self tapping screws.



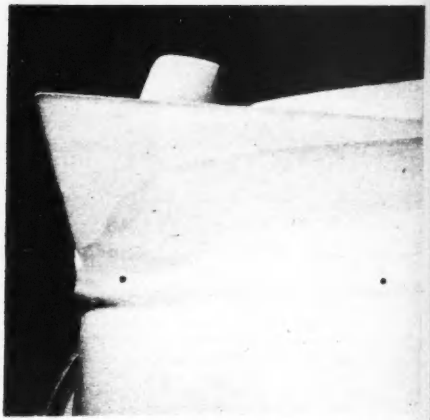
4. Remove units and grind paint from area at least one inch both sides of scribed mark.

5. Mix resin and apply liberally to bottom side of flange. Secure snugly with screws.

6. When resin hardens, remove screws and fill holes with resin—also cover flange edge.



7. After resin dries, edges are block sanded carefully to give a perfectly smooth surface.



8. Area is primed to fill remaining marks, then wet sanded. Surface is ready for paint.

A COMPLETELY NEW APPROACH TO HUBCAP LOCKING DEVICES IS THIS *NEW*, PROVEN, THEFT-PROOF HUBCAP LOCK. FEATURING A LUG BOLT TO HUBCAP LOCKING CABLE. QUALITY CONSTRUCTED FROM "SNIP-PROOF" AIRCRAFT TYPE CABLE AND POLISHED FITTINGS. DOESN'T INTERFERE OR DAMAGE VALVE STEM IN ANY WAY. (PATENT PENDING). FITS 14, 15, 16 INCH WHEELS.

price **$2.95** per set
Certified check, cash or money order. (No C.O.D.)

SCHRAGER ENG. CO.
8617 W. Third Street • CC-8
Los Angeles 48, California
(DEALER INQUIRIES INVITED)

T-BIRD TOP LIFT takes the work out of hardtop removal and storage. Just drive your car under top lift, unlatch hardtop fasteners, attach sling and then pull hardtop easily and safely to the ceiling of your garage or carport for permanent storage. T-BIRD TOP LIFT is made of strong, durable webbing with rust-proof fittings. Installs in minutes. Ideal for T-Bird, Corvette and all Sportscar Hardtops. T-BIRD TOP LIFT comes completely assembled with easy installation instructions.

PRICE $9.95 ppd.
Send Check or M.O.

ATTENTION T-BIRD OWNERS!! Write today for free catalog illustrating the newest T-Bird accessories.

JAMES
AUTO SPECIALTIES
P. O. BOX 151, PASADENA, CALIF.

LETTERS

MORE GUM

Dear Sir:

Just read Howie Gasgar's letter which you titled "Gummed Up". I had the opportunity to pick up a completely demolished '55 Cad. I stripped off the body completely and rebuilt it from the rails up with cherry flavored gum. It works good except when I take off, the heat from burning rubber melts the gum and I have to do it all over again. So, I am working on a hardening solution to lick this problem. What do I do with all the gum wrappers? Well I use them just as you use fiberglass sheets along with epoxy (of course my epoxy is gum). Only trouble is, it's awfully hard chewing all that gum. Also, I've been seeing the dentist more often lately!

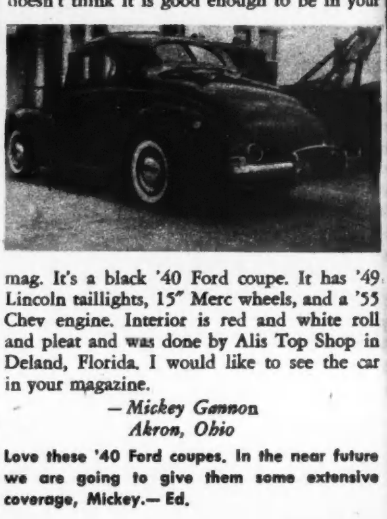
— Rutherford Bomshot
Iron River, Michigan

Enough! Enough! — Ed.

SHARP COUPE

Dear Sir:

I have been reading your magazine for a few years and think it is very good. I'm enclosing a picture of Lenard Sisson's car. He doesn't think it is good enough to be in your



mag. It's a black '40 Ford coupe. It has '49 Lincoln taillights, 15" Merc wheels, and a '55 Chev engine. Interior is red and white roll and pleat and was done by Alis Top Shop in Deland, Florida. I would like to see the car in your magazine.

— Mickey Gannon
Akron, Ohio

Love these '40 Ford coupes. In the near future we are going to give them some extensive coverage, Mickey.— Ed.

THE HOTTEST ONE YET

Dear Sir:

My friend and I have been working hard and long on our semi-custom and would enjoy a return letter regarding our rumbling '40 Ford.

To begin with we have extricated the old reliable stocker. The engine compartment has given way to a block from a '55 Chrysler Firepower Six, which we have built up. For inside developments we procured well known high performance racing equipment. Into the mill went a set of Herman Headers, a camshaft by Risky, a Weeny four-pot manifold and a pair of full race windshield wipers.

After a continual haunt of Ted Plue's Wrecking Establishment we came up with a '42 Willys Willo-Matic box, which was synchronized with a '44 Rambler 2:11 rear end. The terrific acceleration was further increased by means of a fuel injected windshield sack, but the stopping distance was minimized with the insertion of dual overhead brake linings. We encountered a difficult problem of matching the muffler bearings in the exhaust system, but this was soon solved with the purchase of non-expanding balls.

The body modifications consist of molded in doors, trunk, and hood openings along with a raised rear end by reversal of the axle. The front was raked six inches by heating the shock absorbers with a blow torch. The light gorilla brown paint job is enhanced by the delicate pin striping of Von Ditch. Our car is one of the featured members of our hot rod club, "The Clutch Blowups."

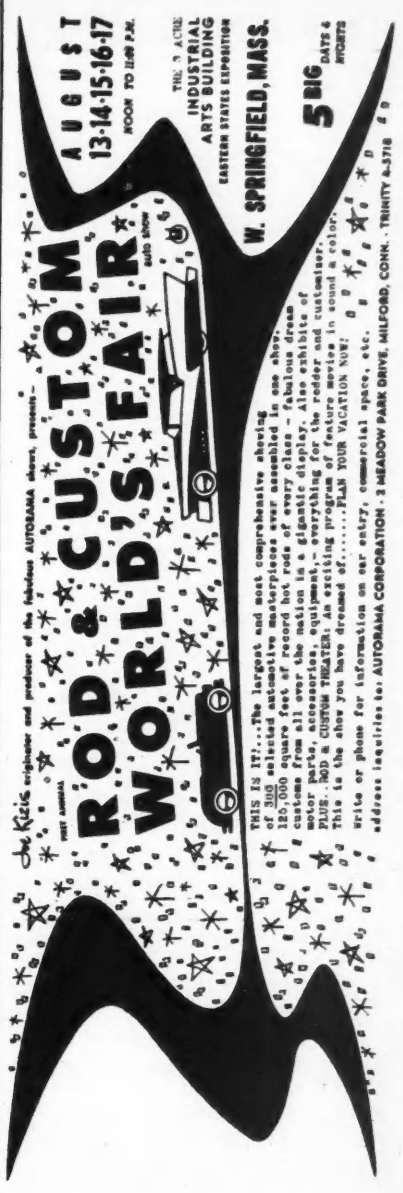
The interior is upholstered with genuine dehydrated Alpaca hide. The headline is trimmed with hand beaten snake skin. The custom seats are soft and spongy, being stuffed with termite fuzz. A car would not be complete without a good luck charm, ours being the left hind leg of a smelly river rat. All in all the car is performing to the utmost of its ability.

— Rich and Frank

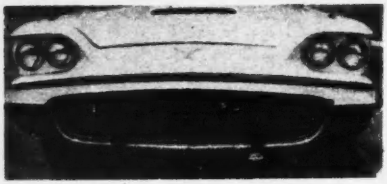
P.S. By now you know this is all in fun. Hope we got a few chuckles out of you. We enjoy your magazine immensely, keep up the fine work and thanks loads for your trouble.

— Frank Sedillo
Portland, Oregon

With all the goodies you've stuffed in your car we don't see how it can possibly miss.
P.S. Thanks for the chuckles.— Ed.


Joe Kirk's original and producer of the fabulous AUTORAMA shows, presents—
ROD & CUSTOM
WORLD'S FAIR
auto show
AUGUST
13-14-15-16-17
NOON TO 11:00 P.M.
THE 9 ACRE
INDUSTRIAL
ARTS BUILDING
EASTERN STATES EXPOSITION
W. SPRINGFIELD, MASS.
5 BIG DAYS & NIGHTS
THIS IS IT!...The largest and most comprehensive showing of 300 selected automotive masterpieces ever assembled in one show. 120,000 square feet of record hot rods of every class — fabulous dream customs from all over the nation in a gigantic display. Also exhibits of motor parts, accessories, equipment,— everything for the rodder and customizer. PLUS: ROD & CUSTOM THEATER! An exciting program of feature movies in sound & color! This is the show you have dreamed of.....PLAN YOUR VACATION NOW!
Write or phone for information on car entry, commercial space, etc.
address inquiries to: AUTORAMA CORPORATION - 2 MEADOW PARK DRIVE, MILFORD, CONN. - TRINITY 4-3716

PAN-"O"-RAMA
GRILLES



FINEST AVAILABLE

★ SOLID STEEL BARS—"CHROMED" (NO TUBES)
★ FULL FLOATING — ADJUSTABLE IN OR OUT 1½"
★ EVEN REAR BRACKETS ARE PLATED AGAINST RUST
★ QUICK TO INSTALL (20 MIN.) IN EXISTING HOLES
★ THAT "CLEAN-AS-A-WHISTLE" LOOK — ("EVEN FOR DAD")
★ COMPLETELY ASSEMBLED AND SHIPPED AS ONE UNIT

f.o.b. Burbank weight 21 lbs. $39.95

DEALER'S INQUIRIES INVITED

12 MODEL CHOICES
'55 through '58 Ford
'55 through '58 Chevrolet
'55 through '58 T-Bird

Pan-"O"-Rama Grilles
FROM TALENT INDUSTRIES
121 W. Linden Ave. • CC-8 • Burbank, California

1/4 Midget Racing WHEELS

Standard sizes 4" - 5" - & 6" Standard and Super widths. All hub lengths, all bearings from ½" to 1" Bore.

All Wheels are STEEL BOLTED construction and cadmium plated.

We stock Goodyear, Firestone, Goodrich & General Tires & Tubes. Also complete line of industrial wheels.

Special discounts to dealers and manufacturers.

Write for name of dealer in your locality to:

MIDGETS Dept. CC-8

NALPAK CORPORATION
1130 E. FLORENCE AVE.
LOS ANGELES, CALIF.
Phone LU 3-1056

WHAT'S YOUR PROBLEM?

By Bob Pendergast

GIVE IT AIR

Dear Bob:

I have a '56 Chevrolet V8 equipped wi Corvette cam and lifters, ported and polishe heads, "power-pack" intake and exhaust sy tems, close ratio gears, and a 4.11:1 rear-e ratio. What would be your sugestions f faster acceleration within the ¼ mile, kee ing in mind that the car will be used f street, too?

— Bud Hill,
Birmingham, Alabama

Give it air, Bud — we've observed a 25 hors power increase from Chev V8's equippe identically as yours, by simply substituting three carburetor manifold for the "power-pack" single four-throat. You can count on pickin up another 20 horses by replacing the ste cast-iron exhaust manifolds with a well-de signed set of headers. You didn't state wha ignition you're using — the stocker should b replaced with at the very least a Corvette unit not only for its dual-points feature, but for th improved acceleration resulting from its superio advance curve. RPM should be held to 6,000 using the Corvette cam, lifters, and valv springs, to avoid destructive float, so reach fo the rear end-gears that will give this figure a a speed comparable (on the high side) with what you're turning now. For instance, if you are getting up to about 90 now, you're only turning 4,500 RPM — replacing your 4.11 gears with 4.89's will give you 98 mph a 6,000, probably with no other modifications. If you put on the manifold and headers, as

recommended above, you shouldn't go that low in gear, so as to avoid over-revving before reaching the finish line. Try 4.56's — they'll give you 105 mph at 6,000, and with the equipment you already have, plus the above recommendations, that's what you should be turning. If it doesn't go that well at first, don't be discouraged — the closer to "full-race" an engine is, the more delicately tuned it must be to perform. If you stick with it, you'll see the other side of the century mark yet! Incidentally, I wouldn't recommend the 4.56 gears for street use unless you have overdrive — can't have your cake and eat it too any other way.

GEARING UP

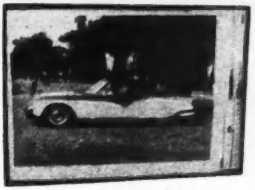
Dear Bob:

I have a '56 M.G. "A" with the standard 4.3-1 rear end gearing. My problem is how to increase my top speed with rear end gear ratios. Could you advise me as to where to obtain a ratio of around 3.25 to 1? At the present time I'm running 5.90 x 15 tires so as to up my speed. I realize a 3.7-1 ratio is available but I desire a faster ratio still.

— John Levigne,
Alberta, Canada

You're trying to get something for nothing, John. It takes a certain amount of horsepower to drive a given car at a given speed. To go faster, in anything, you must have more horsepower. For instance, the MG "TD" which preceded your car had a comparable horsepower rating, but carried a 5.12 rear end gear. Why? Because it was about as streamlined as a barn, and took every last pony it possessed to go 75 mph. Since the engine produced its maximum power at 5,000 rpm, the factory geared the car to go 15 mph per 1,000 rpm in order to have the maximum horsepower speed correspond with the maximum road speed available with that quantity of power. Unless you've done something to your engine to boost its power over the factory rating, or you find that it consistently exceeds its maximum rated horsepower rpm figure in high gear, you've nothing to gain and everything to lose by gearing it up. Not only will your acceleration drop off, which you probably expected, but your top speed will drop, too. My suggestion to you is to install one of the excellent blowers now commercially available for your car in kit form, and live a little. If you still want to sacrifice some acceleration for more top speed after installing the blower, then, but not until, install the factory optional 3.7-1 ring and pinion. End of sermon!

CUSTOM CAR PHOTOS!



EIGHT FOR $2.00!

You've been waiting for these, now they're here! Pictures of America's finest customs. Big 8 x 10 prints. Great for framing . . . decorate your room. Real gassers! Eight outstanding shots. Be first to own them. Terrific offer! Exclusive. Also tells how car was customized. Don't wait — order today!

Lockhart, Inc., 3607 W. Magnolia Blvd.
Burbank 1, Calif.
Please rush me eight 8x10 custom car pictures and info. I am enclosing $2.00 in cash, check or money order.

Name _____

Address _____

City _____ State _____

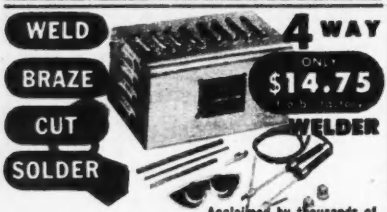
PLANS AVAILABLE FOR
America's MOST BEAUTIFUL QUARTER MIDGET

WERNER
Lil Champ
FULL 50" WHEELBASE
Big enough for a ½ midget
Small enough for a ¼ midget
Plans & Parts List $2.00

ECONOMY KITS
ASSEMBLY KIT $330.
COMPLETE CAR $395.
Prices F.O.B. Milwaukee

For further information write:
WERNER LI'L CHAMP
6454 N. 40th Street
Milwaukee 9, Wisconsin

Free! HI-PERFORMANCE
Catalog & Souping Data
Double Your Cars Power!
Mileage! Style!
SAVE up to ½
Buy direct: Latest Power Kits, Superchargers, Fuel Induction, Dual-Quad Exhausts, Cams, Heads, Manifolds, Engines, Adapters, Chrome, Customizing & Trim—FOR ALL CARS. "Best New Items" Cat. FREE, or send 25¢ to cover postage & we mail you big 50,000 item catalog and "HOW-TO" SOUPING GUIDE, PLUS credit, good on first order.
ALMQUIST
ALMQUIST ENGINEERING
MILFORD, PA. DEPT CCC-8



Complete with Twin Carbon Arc Torch and accessories . . . to handle all metal-craft work.

Acclaimed by thousands of stock, hot rod and customizing enthusiasts as the welder of 1001 uses. Easily operated from properly wired 110 volt AC or DC line. The ideal gift with a life-long use. Order today on 10-day money back guarantee.

Literature on larger equipment on request

FOUR-WAY WELDER COMPANY
1810 S. Federal St., Chicago 16, Illinois, Dept. F-64-H

CUSTOM CARS

Stick shifts our specialty, featuring '55, '56, '57 Chevys, Fords and Plymouths. We have processed these carefully selected stock cars into distinctive, yet moderate customs. Features include proper lowering, pipes, removal of chrome clutter, naugahyde interiors and special paint jobs. Sensibly priced.

MARVIN LEE 1550 E. Colorado Pasadena, Calif.

NEW EASY WAY TO BECOME A TOP PAY

AUTO MECHANIC

The auto industry is short 100,000 mechanics! You can earn top pay, work steady, enjoy lifetime security in this big field. Let CTI train you at home in spare time. *We send valuable Engine Tune-Up Kit and Mechanic's Tools at no extra cost.* You get experience while training, earn money in spare time. Diesel or Body-Fender instruction included. *Write for Catalog today.*

Commercial Trades Institute; Dept. A-841
1400 Greenleaf Ave.—Chicago 26, Illinois
Send free book *Big Money in Auto Mechanics*.

Name_____ Age_____

Address_____

City_____ Zone____ State_____

MORE GO FOR THE '58 FORD

continued from page 33

bolt type are Strombergs with 1⅜-in venturis and they are replacement carburetors for '55 and '56 Chevrolet V8's. Progressive throttle linkage is available for both types of carburetors. Three of the Strombergs should provide adequate carburetion for practically any converted engine.

A two-coil ignition distributor with a reworked spark advance curve and two good coils would be a wise investment; however, it is possible to get fairly good results from a stock distributor by reworking its advance curve to make it advance quicker and giving it more initial lend so the spark timing will be advanced more at all engine speeds. These modifications are for drag racing and when they are made it is necessary to disconnect the vacuum line from the distributor's vacuum advance diaphram.

Another change that must be made to the ignition system is the substitution of spark plug and coil cables that have either copper or stainless steel conductors for the stock cables. Stock cables have non-metallic conductors that provide a resistance to help suppress radio and television interference caused by the ignition system.

The high rear axle ratios used with these engines may be conducive to higher fuel mileage but they aren't ideal for good drag strip performance. Fords have a ratio of 2.9 to 1 with automatic transmissions, 3.56 to 1 with a syncromesh transmission, and 3.70 to 1 with an overdrive. A 3.70 ratio would be high for drag racing and better results could be had with 4.11's or 4.27's — 411's with stock tires, 4.27's with big rubber — so that a reworked engine could turn tight enough to take advantage of its reground camshaft.

As an example of what can be expected from these engines, a stick-shift 352 given a very mild conversion by Les Ritchey and his boys at Performance Associates in Covina, California, turned 98.57 mph in 14.56 seconds at the Pomona, California drag strip. For the amount of work done to this car its time is most encouraging when compared to the 88 to 89 mph for stock '58 Fords.

To gain these 9 to 10 miles per hour at the end of the quarter, the engine was removed from the chassis and completely disassembled to see whether everything inside it

CONTINUED

Now- AMAZING NEW SPEED PLATER

REPLATES AUTO CHROME

right on YOUR CAR with PERMANENT PLATING!

BRING BACK NEW-CAR BRILLIANCE

Here at last is the car-owner's answer to all chrome problems . . . a way that you can do actual ELECTROPLATING right on your own car. You put a brand-new, shiny plating on bumpers, grille, all auto trim. You bring back new beauty and sparkle to your car . . . INCREASE ITS VALUE . . . make yourself proud to own and drive it. With SPEEDPLATER you put on new metal as you brush! And the plating you apply becomes an INDESTRUCTIBLE PART of the metal you plate . . . bonds itself on — forms a hard, sparkling, metal surface that defies all elements!

IT PLATES AS YOU BRUSH

Brings New, Gleaming Beauty to Worn, Dull, even Blistered Chrome Areas of Your Car.

BUMPERS - GRILLWORK - ALL CAR TRIM RESTORED TO NEW BRILLIANCE

Here is how easily you REPLATE your car . . . you simply clamp SPEEDPLATER'S wires to your car's battery, then dip SPEEDPLATE Brush into the miracle plating solution and plate anywhere around your car — without removing any parts. Safe, mild current works FAST — yet uses less battery juice than the tiniest light on your car.

YOU QUICKLY BUILD UP A THICK NEW PLATING WITH EACH APPLICATION

MAKE BIG MONEY PLATING

Now you can add to your income during spare-time hours . . . because 8 out of 10 cars on the road today NEED REPLATING. You can charge $5.00 for touching-up to $50.00 for replating an entire car.

Plating is fun, too! You'll get a kick out of taking rusted, pitted, worn metal and bringing it back to shining smoothness. When neighbors see the brilliant plating on your car, they'll want you to do the job for them.

And you can plate other things for profit, too . . . faucets, appliances, tableware, cutlery, tools, doctors' and dentists' instruments . . . you can get more solutions at low prices any time -..also solutions to plate silver, gold and rhodium. There's big money in jewelry and silverplate work! You get ALL INSTRUCTIONS for plating with your Speedplate outfit!

PRAISE FOR SPEEDPLATER

AMAZING NEW SPEEDPLATER has already plated thousands of cars with Extraordinary Results. Here's what users say: "To say I am pleased is putting it very mild. I have got more work than two of us can do . . . we have to start Booking Jobs ahead like the family Doctor . . . " F. S., Kokomo, Ind. "The Speedplater is certainly one of the most useful devices ever placed within the motorist's reach. It does everything stated for it and does it exceptionally well. There's no poor chrome on my car now." D. C., Elmhurst, IL. Y.

YOU CAN GET THE SAME RESULTS

Remember, we guarantee YOUR SpeedPlater, will perform for you as it has for hundreds of other satisfied users, or your money back!

CAR DEALERS & SERVICE STATIONS

Make BIG PROFITS with Special HEAVY DUTY OUTFIT

Now you can make TERRIFIC PROFITS plating right in your own shop — without removing bumpers, grille, etc. Increase value of your used cars! Touch up new and Restore worn chrome areas to bright, new sparkle! Buick Dealer says: "Wonderful. We had excellent results". Heavy Duty Outfit electroplates on current from standard 12 volt battery. Entire Outfit, COMPLETE, only $34.95. Includes Plating Tank with Permanent Anode, Wires and Clips for Battery Connection, Special Buffing Wheels and Compound, Special Grinding Wheel, Stripping Solution to remove old chromium, Rust Remover, Special Polish, enough Plating Solutions for dozens of cars! You quickly make back entire cost on your very first job! Additional supplies always available from us at rock-bottom prices. MONEY BACK GUARANTEE. Order now. IF COD, send $5 deposit.

CASH REFUND IF NOT COMPLETELY SATISFIED

MAIL COUPON NOW - YOU RISK NOTHING

If you want to put new, permanent, gleaming plating on your own car, you can do it right away and not risk a dime. If you are not COMPLETELY satisfied with great results, just return your outfit in 10 days in good condition and get FULL CASH REFUND AT ONCE! Here's what you get: SPEEDPLATER Brush, with permanent Anode for life-time plating; Wires and Clamps for battery hook-up; enough solutions to plate several cars; Special Buffing Wheels and Buffing Compound, Special Metal Polish. Full simple instructions. Just mail coupon with only $1 deposit, then pay postman $13.95 plus postage when SPEEDPLATER arrives, or send $14.95 with order and we pay all postage charges. SAME GUARANTEE EITHER WAY. CASH REFUND IF NOT COMPLETELY SATISFIED.

EMPIRE MERCHANDISING CO., Dept. CC-88
4 North 3rd Ave., Mt. Vernon, N. Y.

Please rush the electroplating kit I have checked.

- ☐ Regular SPEEDPLATE OUTFIT, $14.95 (If C.O.D. send $1 deposit).
- ☐ Heavy-Duty Service Station Outfit, $34.95 (If C.O.D. send $5 deposit).
- ☐ I enclose full price, send postpaid.

I understand that I must be COMPLETELY SATISFIED or I may return kit within 10-days for immediate CASH REFUND.

Name_____

Address_____

City_____ State_____

SPECIAL INTRODUCTORY OFFER!

6 ISSUES OF CAR CRAFT ONLY $1

(Clip and mail this coupon today!)

CAR CRAFT *Magazine*
5959 Hollywood Blvd., Los Angeles 28, Calif.
Here's my dollar; send me the next **6** issues.

Name_____
Address_____
City_____ Zone____ State_____

FINEST CLUB PLAQUES IN THE NATION

CUSTOM DESIGNED FOR YOUR CLUB!

- **Heavy, 3-D aluminum or brass castings.**
- **Many stock designs for individual orders.**
- **Complete service, polishing, painting, drilling, mounts.**
- **Free literature.**

SEND 50¢ TODAY

For complete catalog on Emblems, Jackets, Decals, Plaques, Novelties—including information on how to start your club and $1.00 Credit Certificate and free Decal.

STYLIZED EMBLEM CO.
1072-C No. Wilton Pl., Hollywood 38, Calif.

DO-IT-YOURSELF
STRIPING KIT

A New and Easy Method for Striping Your Car
Designed Specifically for the "Do It Yourself Fan"

Reg. Kit Includes: Easy Instructions, Illustrations, Patterns, Pro. Brush, Ready-Mixed Striping Paint. Specify 1 Color: White, Black, Red	$3.00
Kit #2 (Reg. Kit Plus 2 Extra Colors)	5.00
Kit #3 (Reg. Kit Plus 14 Special Patterns: Eyeballs, Skulls, Spider Webs, Dragons)	6.00
Kit #4 (Reg. Kit Plus 3 Colors, Spcl. Patterns)	8.00

Vent Striping Kit
1509 N. SAN FERNANDO • DEPT. CC-8 • BURBANK, CALIF.

MORE GO FOR THE '58 FORD

was as it should be. Its cylinder walls were honed to provide .003-inch clearance for the pistons and its crankshaft and rod and piston assemblies were rebalanced. Main bearings were given a clearance of .002-inch when the crankshaft was reinstalled in the block. Grant piston rings were installed on the pistons and the rod bearings were given a clearancce of .0015-inch. Bearing inserts for these engines are supplied in Red and Blue types which provide different clearances and usually make it possible to obtain desired clearances by selective-fitting them to the crankshaft.

A complete Iskenderian cam kit was used. Included in the kit were a hard-faced camshaft with an E-2 grind, 1.5 to 1 rocker arms, tubular pushrods, dual valve springs, hardened-steel spring retainer washers, and chilled-iron valve lifters. Stock intake and exhaust valves were used and the valves were lightened by removing material from the top and bottom surfaces of their heads. The heads were given a tulip shape by removing approximately .070-inch at the center.

Intake ports in the cylinder heads were matched to the ports in the intake manifold and the exhaust ports were matched to those in the exhaust manifolds. The only other work done on the heads amounted to grinding their intake valve ports to the same diameter and regrinding their valve seats.

This engine had a Ford carburetor — some

continued

REUPHOLSTER with a BRUSH!

RAMCOTE FLEXIBLE FINISHES
Restores — Colors
Protects Leather
Leatherette or
Vinyl Plastic

Renew dull, faded, worn leather or vinyl plastic upholstery. Car, plane or boat seats, headliners, sidepanels will look new in any color. Redesign, customize new or used interiors. You can change color too! Easily applied brush or spray. RamCote Flexible Finishes (not a paint) impregnates leather or vinyl plastic upholstery. Won't chip or peel. Fadeproof, waterproof. Use on home & lawn furniture. Write for free information, color chart, and dealer location.

RAMCOTE, 1141 W. 69th St. Chicago 21, Ill. Dept. CC

JACKET EMBLEMS

LADY LUCK
4" Felt Emblems 25
7" Felt Emblems 50
10" Felt Emblems ...1.00
Decals available in same sizes at the same price. Specify when ordering.

PERSONAL NAME EMBLEMS
Four Color .. 25¢
Glow
SEND NOW
...for NEW completely illustrated catalog emblems, novelties and accessories— 25¢

LADY LUCK SPOT ENTERPRISES
P.O. Box 68 Culver City 13, Calif.

FIBERGLASS SPORTS CAR BODIES

Seven distinctive models. Fit any chassis. Coupes — Roadsters — All sizes.
as low as $295
Send $1.00 today for illustrated brochure and instruction plans. Your $1.00 will be applied to purchase price. Write Dept. 5

VICTRESS MFG. CO., INC.

NEW MULTI COLOR DECALS
EXCLUSIVE!
ORIGINAL DESIGN • HIGHEST QUALITY
"BEAUTIFY" YOUR CAR, BOAT, CYCLE, LOCKER, JACKET, ETC. EASY TO APPLY, LONG LASTING UNDETECTABLE CLEARCOAT. 4" TO 6½" HIGH.
$1.00 each 3 for $2.00
ORDER NOW
Be the First to Get
COOL-CAL
Box 270, Des Moines, Iowa

FREE

Giant New 260 Page AUTOMOTIVE CATALOG!

SAVE UP TO 50% on all parts for your CAR HOT ROD CUSTOM CAR STATION WAGON TRUCK —all models

Over 85,000 Items in Stock!
Newest 1958 Accessories!

Get your FREE copy now . . . everything you need for your car, truck, custom styled car or hot rod. Save up to 50% buying-by-mail from Whitney! Thousands of hard-to-find items for cars from 1920 to 1958. See newest Hollywood accessories not offered in stores; high speed and power parts, custom styling equipment . . . all at lowest prices! Guaranteed satisfaction or money back. Our 20th year.

RUSH COUPON! Please send 25c to help pay catalog mailing and handling costs. We will credit 25c on your first order for $5.00 or more.

J. C. Whitney & Co. 1917 C-8 Archer Ave., Chicago 16, Ill.

MAIL THIS COUPON NOW!

J. C. WHITNEY & COMPANY,
1917 C-8 Archer Ave., Chicago 16, Illinois

Rush giant 1958 catalog of auto parts and accessories at sale prices. I enclose 25c to cover part of mailing and handling cost, which will be credited to me on my first $5.00-or-more order. OFFER GOOD IN U.S.A. ONLY.

NAME.....

ADDRESS.....

CITY.....STATE.....

MORE GO FOR THE '58 FORD

have Holleys and others have Carters — a the changes made to it included changing th metering jets on both its primary and second ary sides and modifying its secondary throttl valve control so the valves would open soone

The ignition distributor was reworked t provide more advance than it did in its stoc form and its vacuum advance mechanism wa disconnected. Its governor advance mechanism was altered to provide 32 crankshaft degree instead of the stock 27 degrees and it wa installed in the engine with a ten-degre initial advance. This gave a total advance o 42 crankshaft degrees. Its breaker point plat was replaced with a Dyna-Flite dual-point plate and the points were adjusted to provid a cam angle of 36 to 38 degrees. Packar 440 spark plug cables were installed in plac of stock TVRS cables.

Installing the reground camshaft and th work done on the valve train made it pos sible for the engine to wind tighter but th modification that made it possible to use th higher engine speed was a set of lakes pipes welded to the stock exhaust pipes close to the manifold outlets. With the lakes pipes plug ged the car ran 93.45 mph in 15.00 second and when they were unplugged to enable the exhaust gasses to escape from the system without going through the mufflers and tail pipes the speed jumped to the 98.57 mph quoted earlier. This example shows the im portance of a free-flowing exhaust system on one of these engines and when good header ers become available the improvement will be even more noticeable.

COMING ATTRACTION

Attractive Louise Muller, of National City, California, gives a hint of next month's star feature attraction — glamourized running boards in all shapes, sizes, and patterns. Don't miss this exclusive report . . . appearing in the forthcoming September issue of CAR CRAFT!

WHAT DO THESE WORLD'S RECORDS MEAN TO YOU?

JUST THIS:

You, too, can use the same Grant Piston Rings in your car engine that experienced, analytical engineers depend upon when selecting these perfected components when the chips are down . . . as at Riverside, Bonneville or Indianapolis.

In high speed work, or as in your regular daily driving, piston rings to be at their best should: 1. Be capable of sustaining power, saving every bit of it; and 2. Preserve your expensive engine block for many, many miles, under every type of weather conditions, cold or hot, dusty or clear.

The Glass Slipper is powered by a 301 cubic inch Chevrolet V-8 engine. Two-way kilometer, standing start average: 116.43 m. p. h. Top Speed: 160.85 m. p. h. Feb. 2, 1958. Riverside, Calif.
Subject to F.I.A. Approval

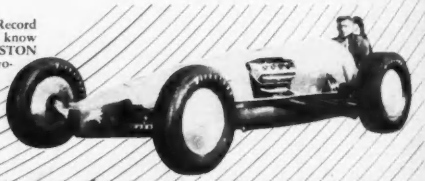
In setting the new International Class C record, the "Glass Slipper" driven by Ed Cortopassi, Mr. Zel Selig of the CAPITOL SPEED SHOP of Sacramento, California, points out how GRANT PISTON RINGS performed in the record runs:

. . . Owner Ed Cortopassi, his partner Doug Butler, and I want to thank you for the big part Grant Piston Rings have played in these successes. Grant's are the only rings I stock in the Capitol Speed Shop, and of course the only rings we have ever used in the Glass Slipper. The Grant oil ring exerts a minimum of drag, and the compression rings effectively seal the tremendous combustion chamber pressures we attain with the special racing fuels we use.

Yours very truly, ZEL SELIG

". . . In breaking the International World's Acceleration Record for the standing start kilometer, we wanted to let you know that due to the excellent performance of GRANT PISTON RINGS, we were able to make the required amount of two-way runs necessary to establish the new records."

Cordially, Calvin Rice



On the USAC and FIA runs, Calvin Rice drove a two-way average of 123.56 m. p. h. for the record standing start kilometer, with top speed of 182.22 m. p. h. Equipment: 342 cubic inch Chrysler, with a 6.71 GMC Blower.
Subject to F.I.A. Approval

THE GRANT PISTON RING COMBINATION

1. Careful side-sealing of this Top Compression ring, with its special "dishing" action builds and holds power.
2. Grants' double oil-carrying second Compression ring maintains an even distribution of oil on cylinder walls and doubly insures compression sealing.
3. Grants' great oil carrying ring controls excess oil due to a unique dove-tailed design. It's long been used to gain drag-free liveliness and to correct sluggish engine conditions.

Grant

241 N. Westmoreland Ave., Los Angeles 4, Calif.

Grant Rings have long been the choice of careful users in:

Passenger cars, taxi fleets,
Trucks and stationary engines,
Aircraft, Motorcycles and,
All classes of race cars from micro and quarter midgets to the big Indianapolis cars

. . . The main reason is,

GRANTS ARE DEPENDABLE.

GRANT "T" SHIRT $1.50 each, postpaid

Offer Good in U.S.A. Only

Grant and Grant, 241 N. Westmoreland Ave., Los Angeles 4, Calif.

Gentlemen: Send me _____ Grant "T" Shirts.
Check quantities and sizes below: $1.50 each, ppd.
_____ Small☐ _____ Medium☐ _____ Large☐ _____ Ex. Large☐

NAME _____

ADDRESS _____

CITY _____ STATE _____